

Published every Saturday by the
Simmons-Boardman Publishing
Corporation, 1309 Noble Street,
Philadelphia, Pa., with editorial
and executive offices: 30 Church
Street, New York, N. Y., and 105
West Adams Street, Chicago, Ill.

SAMUEL O. DUNN, *Chairman of Board*
HENRY LEE, *President*
LUCIUS B. SHERMAN, *Vice-Pres.*
ROY V. WRIGHT, *Vice-Pres. and Sec.*
FREDERICK H. THOMPSON, *Vice-Pres.*
ELMER T. HOWSON, *Vice-Pres.*
F. C. KOCH, *Vice-Pres.*
ROBERT E. THAYER, *Vice-Pres.*
H. A. MORRISON, *Vice-Pres.*
JOHN T. DEMOTT, *Treas.*

CLEVELAND
Terminal Tower

WASHINGTON
1081 National Press Building

SEATTLE
1038 Henry Building

SAN FRANCISCO
485 California Street

LOS ANGELES
530 West 6th Street

Editorial Staff

SAMUEL O. DUNN, *Editor*
ROY V. WRIGHT, *Managing Editor*
ELMER T. HOWSON, *Western Editor*
JAMES G. LYNE, *Assistant to Editor*

C. B. PECK
ALFRED G. OEHLER
F. W. KRAEGER
E. L. WOODWARD
J. H. DUNN
D. A. STEEL
R. A. DOSTER
H. C. WILCOX
NEAL D. HOWARD
CHARLES LAYNG
GEORGE E. BOYD
WALTER J. TAFT
M. H. DICK
E. J. PHILLIPS
JOHN H. KING
W. H. SCHMIDT
JOHN S. VREELAND
C. L. COMBES

The *Railway Age* is a member of
the *Associated Business Papers* (A.
B. P.) and of the *Audit Bureau of*
Circulations (A. B. C.).

Subscriptions, including 52 regular
weekly issues, and special daily edi-
tions published from time to time
in New York, or in places other
than New York, payable in advance
and postage free. United States,
U. S. possessions and Canada: 1
year, \$6.00; 2 years, \$10.00; foreign
countries, not including daily edi-
tions: 1 year, \$8.00; 2 years, \$14.00.

Single copies, 25 cents each.

H. E. McCandless, *Circulation*
Manager, 30 Church St., New York,
N. Y.

Railway Age

With which are incorporated the *Railway Review*, the *Railroad Gazette*
and the *Railway Age-Gazette*. Name registered U. S. Patent Office.

Vol. 107

December 16, 1939

No. 25

In This Issue

Southern Pacific Buys Articulated Coal-Burning Locomotives . . . Page 918

The twelve 2-8-8-4 type units built for this road by Lima for use in heavy
passenger and freight service on the Pacific Lines, are described in this article.

St. Louis Municipal Bridge Is Ready for Use 923

A description of the recently completed facilities for railway operation over the
municipal bridge across the Mississippi, together with a review of the history
of this structure, built by the city of St. Louis 22 years ago.

Rock Island Develops New Records for Storekeeping . . 926

How this road has standardized the keeping of stock by equipping all stores
with single-item stock books—a result of two years of experimental work.

EDITORIAL

Hopkins Boards the "Barriers" Bandwagon 915

GENERAL ARTICLES

The Railroads Have an Unused Garand 917
Southern Pacific Buys Articulated Coal-Burning Locomotives 918
St. Louis Municipal Bridge Is Ready for Use 923
Rock Island Develops New Records for Storekeeping 926
Union Pacific Provides New Merchandise Service 929

NEWS 932

OPERATING REVENUES AND EXPENSES 946

The *Railway Age* is indexed by the *Industrial Arts Index* and also by the
Engineering Index Service

PRINTED IN U. S. A.

Why not go all the way...

Install "Union"

CAR RETARDERS!

October 21, 1939

RAILWAY AGE

Penny Wise — Pound Foolish

A collection of the hundreds of motor cars used for returning car-riders to the hump in gravity yards would be a sorry spectacle. Traditionally such cars, while complying with all the safety rules, are otherwise decrepit and outmoded, and breakdowns are frequent. It is amazing to find, in an otherwise modern yard, such archaic, slow and uncertain motor cars chugging up and down their track (when they are in shape to run at all). Such cars have no place in a modern yard.

Modern efficient motor cars for car-riders present a better appearance, but there is a thoroughly sound economic reason for their use as well. It costs approximately \$90 per hour to operate one of the largest gravity yards in the country. This yard was formerly equipped with motor cars which, even at their best, could not attain a speed of more than 8 to 9 miles an hour on the upgrade when loaded. In addition, frequent breakdowns caused more delays.

A survey over a period of a month showed that these cars slowed up the yard more than 45 min. daily because of one delay or another. In other words, inefficient motor cars were costing nearly \$70 a day, for in a busy yard time is certainly money. Many yards throughout the country will show comparable losses from the same cause. It is pertinent to note that the difficulty in the yard referred to above has been corrected through the purchase of new cars, and issuing instructions that they be inspected periodically and as thoroughly as any yard locomotive.

The efficiency of operation in classification yards equipped with "Union" Electro-Pneumatic Car Retarders, has reduced switching operations at other yards and, in most installations, has expedited freight movements over the entire railroad. This expedited traffic has resulted in making deliveries several hours earlier. In addition to increased efficiency, the retarders have paid for themselves in a short time through the savings effected.

Now is the time to give serious consideration to installation of car retarders. Shall we furnish details?



UNION SWITCH & SIGNAL COMPANY
SWISSVALE, PA.

NEW YORK

CHICAGO

ST. LOUIS

SAN FRANCISCO

Hopkins Boards the "Barriers" Bandwagon

Harry Hopkins, Secretary of Commerce, has added his pious tremolo to the growing chorus of governmental officials who, under the baton of the National Highway Users' Conference, are chanting a lugubrious hymn of lamentation against alleged "barriers" to interstate commerce. Hopkins has written to other government departments seeking to gain still more recruits for the Highway Users' Conference glee club—and asks the choristers from other government bureaus to gather with Department of Commerce warblers, and maybe they will take their little song around and serenade the Temporary National Economic Committee (the "Monopoly Committee") with it.

Hopkins is an honest man—at least we have never seen anything plausible to the contrary. But honesty is no armor against being hooked for a sucker—quite the contrary, indeed. Take Henry Wallace, for instance—than whom possibly no more painfully upright fellow (according to his own lights) ever drew a politician's wages. Yet Henry also has swallowed this "barrier" baloney—wrapping paper, skin and all.

Now, there do undeniably exist *some* trifling impediments to the free interstate movement of a few commodities which give these "barrier" complainants just the shred of reason which they need for their campaign (as the slender remains of the Treaty of Versailles gave Hitler his boob-catching justification for his rape of Czechoslovakia and Poland). Such occasional hindrances as phony inspection laws, the only purpose of which is to restrain trade, ought, of course, to be removed. But most of the hollering of the "barrier" bellyachers has nothing to do with such genuine and indefensible restrictions against the movement of goods. Its real objective is the outright removal of all state taxes against out-of-state trucks, and the destruction of all police power of the states over the size and weight of motor trucks which may move over their highways.

Railroads Overlooked This One

What kind of a "barrier" to trade is it to require an out-of-state concern to pay taxes and abide by the police regulations in states in which it wishes to do business? Of course, nobody wants to pay taxes, and, if he can avoid paying them, no doubt that would encourage *his particular kind of trade*. In fact, reduction of almost

all kinds of taxes, made practicable by reduction of most kinds of present huge and unprecedented government expenditures—including expenditures on highways and waterways—would encourage and stimulate almost every kind of production, trade and employment.

But a Kentucky railroad corporation (*viz.*, the Southern Pacific) does not escape paying taxes in Louisiana, Texas and California and other states where it does business simply because it happens to be incorporated in Kentucky. Nobody ever thought of dubbing reasonable taxes on railroads in states where they operate but in which they are not incorporated as "barriers" to interstate commerce—which shows how dumb the railroads are. Because if a Kentucky truck has to pay taxes in Ohio or Missouri, where it operates (or vice versa), that is denounced as an insufferable "barrier." And if Kentucky taxpayers decide (as they have decided) that they cannot afford to build roads so costly that they will stand the pounding of gigantic trucks, and they limit trucks to 9 tons' weight (no discrimination against out-of-state vehicles, Kentucky trucks must observe the same limit)—that too is angrily condemned as a "barrier" to interstate commerce.

"Ports of Entry" an Aid to Commerce

Similarly, the "port of entry" comes in for a malicious drubbing. In point of fact, the "port of entry" is not only not a "barrier" to trade, but an aid thereto. That is, if it be accepted that the highway facilities a truck uses cost money and are worth something to it, then it is an aid to trade to collect from the carrier only when and if he has goods to move, instead of making him pay for a period during which his trips may be few or none at all. There is, logically and economically, no more reason why a Missouri truck entering Kansas should get the use of its highways for nothing at the expense of Kansas taxpayers than there is for the state of Kansas to present the visiting truck with a free tank-full of gasoline. The "port of entry" is there not to penalize the visitor, but to collect the minimum road-rent due from him. The "port of entry" is thus a means of collecting minimum reasonable fees for road use, and avoiding the only other alternative (aside from granting the visitor free use of the highways), *i.e.*, re-

quiring the visitor to purchase plates good for the duration of some period of time, which requirement might work a real hardship on him.

Railway Branch Lines as "Barriers"

Is it a "barrier" to trade for some railway branch lines to be built to handle only 125-ton engines while the main line of a railroad is built to support locomotives weighing upward of 200 tons? Of course, such a condition is not a "barrier"—but an aid to interstate commerce. Because, if all track structures had to be built to support the heaviest locomotives, expenditures would be required to bring branch lines up to standards which their traffic cannot economically justify. That uneconomic expenditure would increase the cost of transportation—and such increased cost would be a *real* barrier to the flow of interstate commerce.

Well, the "barrier" against heavy locomotives on light branch-line railroads is an exact parallel to the alleged "barrier" the more thinly populated states have against trucks of the heaviest weights. Rich and highly-developed states with a lot of taxpayers to levy upon can afford, maybe, to build roads for vehicles weighing 20 tons and up—but that doesn't mean that there is any real economy in forcing all states to do the same. And uneconomic expenditure on transportation facilities which the traffic does not justify is a real burden on interstate commerce. The complainers against truck weight "barriers" to interstate commerce are not really trying to take burdens off of such commerce; they are trying to increase them.

Why States Can't Overcharge Truckers

Such noble souls as Hopkins and Wallace, before they go charging off to the wars in behalf of a lot of cynical Big Business schemers, ought to reflect for a moment on *the obvious impossibility for any state either to overcharge trucks for the use of its highways or unreasonably to limit truck weights and sizes*. This pro-

tection exists in the right which truck owners have, within only those restrictions under which all corporations operate, to *join together and build their own highways*. On such highways trucks would not require any license plates and state laws limiting sizes and weights would not apply. The fact that such highways have not been built is all the evidence that the realistic inquirer needs to prove that there is no state in the union that is not giving its truckers more than they are paying for in the way of highway service. When highway fees and highway restrictions become unreasonable, private trucking highways will be built—if truckers can stand the expense of providing their own highways, as the railways do. Until such time, anybody with any critical sense knows that complaints of "injustice" to trucks are boob-traps and nothing more.

Like an iceberg, the truck propaganda machine is mostly below the surface—but the persistent bobbing up here and there all over the country of such easy marks as Hopkins and Wallace with arguments too cleverly misleading to have been the product of such disingenuous souls shows how colossal and substantial the sub-surface hulk must be.

Meantime, why have not "trade barriers" occurred to proponents of inland water transportation as an argument against charging tolls for the use of waterways and against the regulation of water transportation? Much, and probably the bulk, of water transportation is interstate; and making the users of waterways pay for their use and regulating their rates would "interfere" with interstate commerce—in the same way that making any carrier, including a railway, bear the entire cost of rendering its service and regulating its service and rates "interferes" with commerce, whether intrastate or interstate. The truckers and the Big Business that backs them have sold the idea of "trade barriers" to Harry and Henry. Why can't the waterway racketeers? And why have so many honest men like Harry and Henry been made so gullible while so much cleverness has been bestowed on so many unscrupulous schemers?

Willkie Chides Business' Quest for Subsidies and Appropriations

"This country was founded on the idea that the individual is the source of the State's power and that the State was created *by and of* the men in it, and existed only to serve them. In fact, the United States is the only country which was organized on this principle from the very start. And, for the first century and a half of our existence, we were fortunate in living in a period when throughout the western world the doctrine of individual rights was gaining over the doctrine of absolute State power. . . .

"Now and then in its relations with private enterprise the Government has established a temporary policy of appeasement, or a breathing spell,—pleasant little intervals between hostilities. And when we have optimistically believed these to be periods of Government cooperation—some government official has sounded the trumpet for a new attack upon the people's industries. Each time the tired business man has settled down to his business, with a

somewhat happier smile on his face, he has been aroused by a new threat of government antagonism—much as the Egyptians used to carry around a mummy with the last course of every banquet to indicate that death was never very far away.

"But Government is not the only transgressor. Business too, needs to mend its ways. For many years various sections of American industry have asked for special legislation which offered a temporary benefit at the expense of normal economic processes. Business has asked for special subsidies and special tariffs, for special protection against price cutters or low cost producers, for government appropriations for this or that special purpose. Business cannot ask for government interference at one time, and then indignantly reject it at another.

"And it hasn't been a pretty picture to see business, in the hope of advantage, craven and afraid to take its case to the people. . . ."

—From a Speech by Wendell Willkie to the N. A. M.

The Railroads Have an Unused Garand

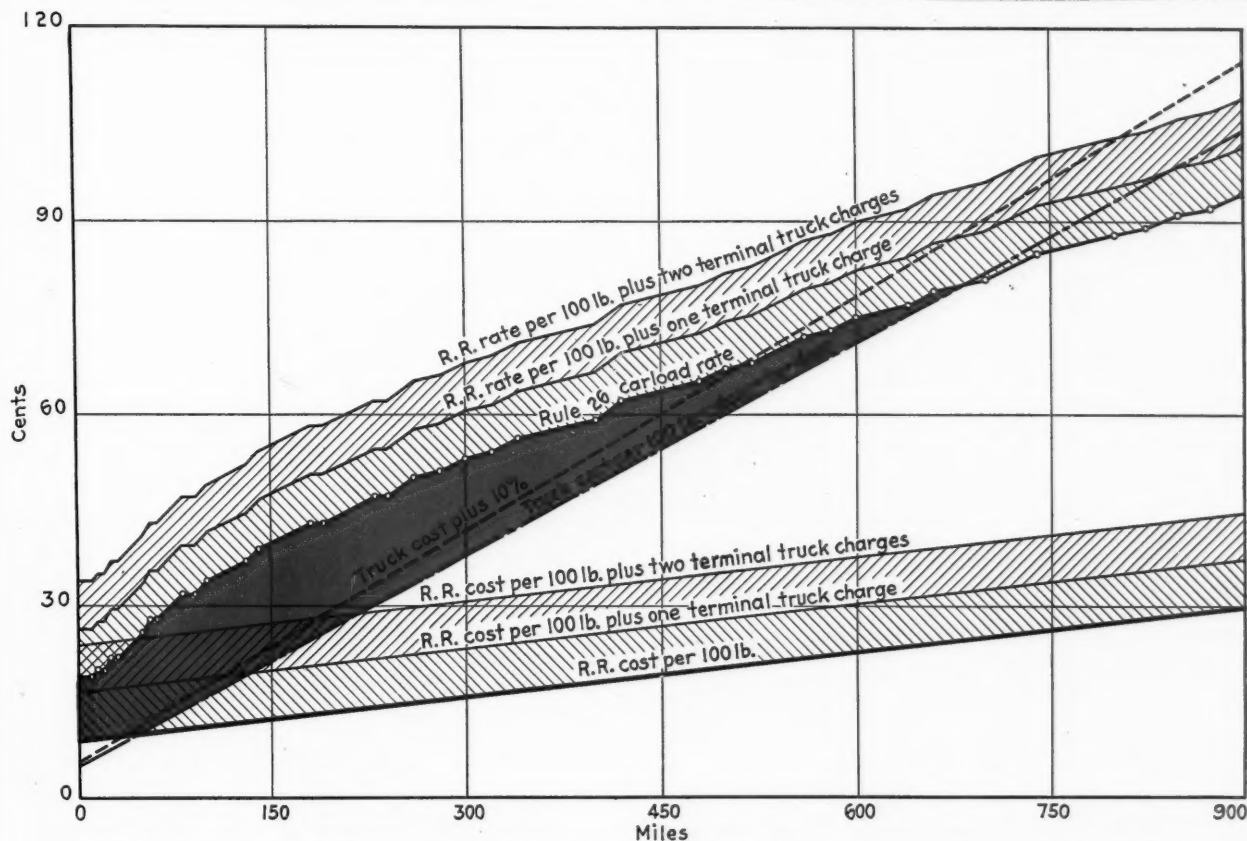
The railroads would be aided in meeting competition from their rivals, if the latter did not enjoy subsidies and other political favoritism. They are also aided in meeting their competition by every improvement in methods or equipment which reduces railroad operating costs or the costs borne by shippers which are incidental to their patronage of the railroads (such as packing and terminal trucking, for instance).

In emphasizing, as has been done in these articles, the desirability of meeting competition by rate adjustments based on cost advantages which the railroads already enjoy, the approaches to a solution indicated in the preceding paragraph have not been ignored. Rather, the thought has here been to concentrate attention on those weapons of defense which the railroads have *already at hand*,

of the trucks at a distance of approximately 50 miles but that the rate structure, ignoring the railroads' cost advantage, permits the trucks to compete up to more than 500 miles, *even on traffic received and delivered at plant sidings*. Where the customer has to do terminal trucking at both ends, the rates portrayed in this chart permit truck competition to undersell the railroads on hauls up to 800 miles.

The chart suggests, while rate readjustment is fundamental to any solution of the railroads' competitive problem, that reduction in railroad terminal costs and in the costs of shifting loads between rail and highway would also be powerful factors in recovering traffic to railway handling.

This chart is adapted from one which appears in a study of the railroads' competitive problem by



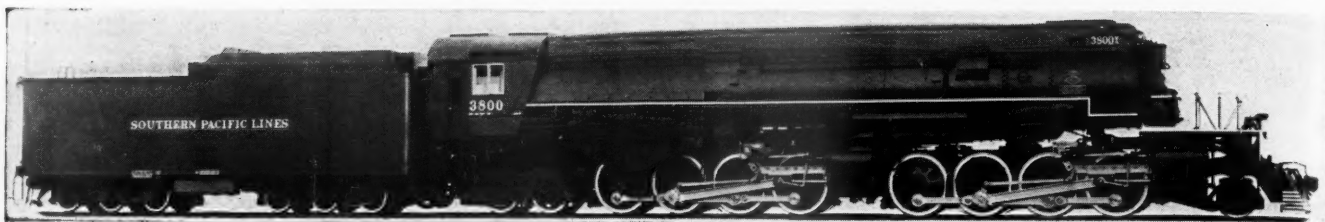
The Red Area Portrays the Extent of the Maladjustment of Certain Typical Rates to Existing Competitive Conditions

and of which they are making only limited use. Cost advantage over their rivals is such a weapon.

It is significant when a problem is analyzed from one point of view, and certain conclusions reached, if an analysis from an entirely different and independent approach corroborates the results of the first analysis. Such corroboration of the general thesis of this series of articles is given in the accompanying chart, portraying the extent to which certain typical freight rates are maladjusted to prevailing competition. The chart also draws attention to the importance as a competitive factor of terminal trucking costs borne by customers. From this chart it appears that, on the particular traffic portrayed, handling costs by rail fall below those

W. P. Kellett, a consulting engineer at 88 Lexington avenue, New York. No summary or appraisal of Mr. Kellett's study is here undertaken, because his analysis goes beyond the scope of this series of articles, dealing primarily with the problem of terminal costs (both those of the railroad and the railroad patron), with a specific recommendation for its solution.

It seems significant and important, however, that an independent engineering analysis, not concerned primarily with the rate structure, should have arrived at substantially the same conclusion regarding that structure as that reached in this series, which approached the problem from an entirely different angle.



Coal-Burning Locomotives of the 2-8-8-4 Type Built for the Southern Pacific by Lima

Southern Pacific Buys Articulated Coal-Burning Locomotives

Twelve 2-8-8-4 type, built by Lima, are in heavy passenger and freight service on Pacific Lines

THE Southern Pacific has received twelve 2-8-8-4 articulated passenger and freight locomotives from the Lima Locomotive Works, Inc., which are designed for use in coal-burning territory. Without extensive application of extra sheathing, the locomotives have been given a particularly clean and pleasing appearance by the use of the "skyline" casing over the top of the boiler and by a decorative reinforced steel-plate pilot. These locomotives are now in service on the Pacific Lines of the Southern Pacific between El Paso, Tex., and Tucumcari, N. M., a distance of 332 miles. This is a line with mountain grades which reaches a maximum elevation of 6,724 ft.. The maximum ascending grades are 1 per cent and are long, as the line rises 3,000 ft. eastbound from El Paso to the summit between Gallinas, N. M., and Corona, and 2,700 ft. westbound between Tucumcari and the summit. The locomotives burn a low grade bituminous coal from the Dawson Field in New Mexico. The coal has a heating value of approximately 12,000 B.t.u. per pound.

The locomotives have a total weight of 689,900 lb., of which 77 per cent is on the drivers, and develop a rated tractive force of 124,300 lb. The boiler carries a working pressure of 250 lb. per sq. in. The cylinders on each of the two engine units per locomotive are 24 in. diameter by 32 in. stroke. The diameter of the driving wheels is 63½ in. The locomotives are designed for a maximum speed of 75 miles an hour and can negotiate curves up to a maximum of 18 deg. A maximum cylinder horsepower of 6,000 is developed at 40 m. p. h.

These locomotives are much the same in capacity and general construction as the locomotives of similar wheel arrangement which, since 1928, have been built in considerable numbers for oil-burning service on the Southern Pacific. The latter locomotives, however, have all been arranged for operation with the cab ahead and, in detail dimensions, the boilers of the coal-burning locomotives differ from those of the oil-burning locomotives, being slightly larger. A feature of particular interest is the employment of crown-bearing driving boxes which have oil lubrication.

The Boilers

The boilers of these locomotives are of the conical type, the taper being in the first course. The shell sheets,

which are of basic open-hearth flange steel, are 1⅜ in. thick in the first and second courses and 1⅞ in. thick in the third course. The combustion chamber extends into the third barrel course and is 58½ in. long. The length over the tube sheets is 22 ft.

The firebox, which measures nearly 206 in. in length inside the mud ring, is of welded construction, with the exception of the tube sheet which is riveted in the combustion chamber. The longitudinal seams in the barrel courses are seal welded at the ends for a distance of about 14 in. In the firebox are seven Security circulators. Six Nathan boiler drop plugs are placed in the crown sheet of the combustion chamber to prevent boiler explosions caused by overheating due to low water. One



each is installed near the front and rear of the combustion chamber on the top longitudinal center line with two pairs placed at intermediate points, each pair spaced four rows apart on either side of the center line.

Flannery Type D tell-tale flexible staybolts with UW type sleeves and caps are used in the breaking zones in the sides and back of the firebox. There is a full installation of these bolts in the combustion chamber, except for the long stays over the crown sheets. Expansion crown stays are applied on the four front transverse rows over the top of the combustion chamber. These are the Flannery Type K with WR sleeves.

The grates in the firebox are the Firebar type and coal is fed by a Standard type MB stoker with the engine located on the left side of the tender. The Signal Foam-Meter and Electro-Magnetic blow-off are part of the boiler equipment. The boiler feeding equipment comprises a Nathan No. 17 Simplex injector and a Hancock exhaust-steam turbo feedwater heater, size TA2, on each locomotive. The turbo feedwater heater is mounted below the cab on the left side of the locomotive and is capable of delivering 13,000 gallons of water per hour to the boiler.

The superheater is a Type E with the American multiple throttle built into the header. Steam enters the dry-pipe through a Tangential steam dryer in the dome.

The ash pans are designed with an air opening equal to the total flue cross-sectional area. In addition to the two hoppers inside the frames, there is an outside hopper at the front of the ash pan on either side of the locomotive.

Frames and Running Gear

The foundation of each unit of the locomotive is a Commonwealth bed casting in which the cylinders are cast integral. The cylinder spread is 93 in. The second barrel course of the boiler is carried on the rear cylinder saddle. The forward firebox support is of the expansion plate type. The rear end of the firebox is carried on oil-lubricated expansion shoes.

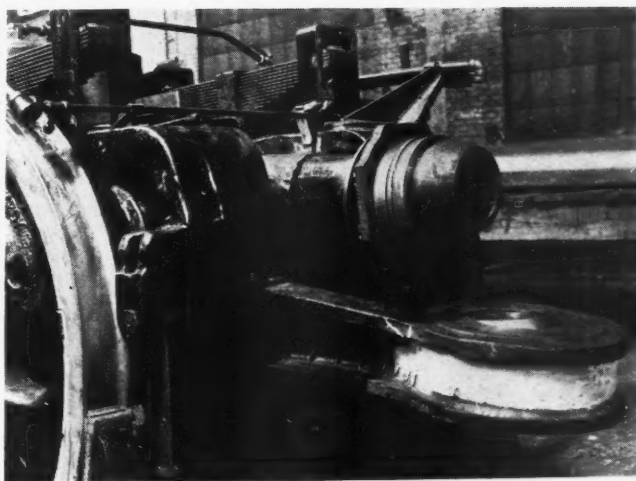
The hinged radius bar at the rear end of the front bed casting is pivoted about a 7-in. pin and ball joint which is pocketed in the rear cylinder saddle. The boiler bearing on the front unit is between the second and third pairs of drivers and under the rear of the smokebox. The sliding pads are oil lubricated and a spring centering device is part of the installation.

The driving journal boxes are of the crown bearing type with spring-pad oil lubricators in special cellars. The spring pads and cellars were developed by the Southern Pacific Company. The cellars are held in place by latches fitted with coil springs to permit free endwise movement of the cellars when the wheel hubs come in contact with felt pads inserted in slots at the rear of the cellars. These pads, the inner ends of which are fed with oil from the cellar, provide positive lubrication of the driving-box hubs. The cellars are easily withdrawn without removing the cellar bolts. Dirt, water, and other foreign matter is kept out by means of serrated brass spring-action dust guards which are closely fitted to the journal from the top and bottom on the inside end of the box and by a spring action oil-proof seal at the outside end.

Supplementing the spring-pad lubricator, oil is fed to the journals from a force-feed mechanical lubricator.

Because brass crown bearings do not provide a satisfactory surface against steel when oil lubricated, a serrated recess is cut in the crown brass into which is poured a lining of white metal as a bearing surface.

The driving-wheel centers are of the Boxpok type. The axle wheel fits on these locomotives are tapered .003



The Rear End of the Front Bed Casting and Running Gear—In the Foreground Are the Radius Bar and the Ball Joint on the Rear End of the Steam Pipe to the Front Cylinders

in. in diameter, the large end being at the inner end of the fit. One and one half inches at the inner end of the fit on the axle is finished by grinding. The same principle is applied on the crank-pin fit in the wheels. The tires on the drivers and trailing wheels are protected by retaining clips, a safety feature developed by the railroad.

The leading truck is of the two-wheel type with a constant resistance lateral motion of $33\frac{1}{2}$ per cent. The trailing truck is of the four-wheel Delta type. The initial lateral resistance is 15 per cent with a constant resistance of 10 per cent. Both trucks were furnished by the General Steel Castings Corporation. The leading truck wheels are of wrought steel, 36 in. in diameter. All four trailing-truck wheels have cast-steel spoke centers and are $45\frac{1}{2}$ in. in diameter over the tires.

The Alco lateral-motion device is applied on the rear pair of driving wheels on the front unit and on the front pair of driving wheels on the rear unit.

These locomotives have 40 per cent of reciprocating parts balanced, the main wheels being crossbalanced. The balances in the front, intermediate, and back wheels are increased to allow for crossbalance effects, the overbalancing thus gained being deducted from the main wheels. The main rods were pendulum tested to determine the correct revolving effect.

Steam Pipes, Motion Work and Driving Gear

Steam for both engines leaves the front-end branch pipes through a single pair of outside steam pipes, one on each side of the locomotive. Each of these pipes, which are 9 in. in diameter, is carried back from the elbow casting at the side of the smokebox to the front of the rear cylinders where there is a slip joint connection. Live steam for the front pair of cylinders is carried forward from the front face of the rear saddle casting by a single 8-in. pipe on the longitudinal center line of the locomotive. This pipe is in two sections with ball and slip joints between the sections and a ball joint at the back hinge connection. The connection between the sections is made in a chamber in the bed casting. The steam pipes are insulated with special Insulbestos covering.

Exhaust pipes from the rear cylinder extend forward along each side of the locomotive toward the smokebox. These are 8-in. pipes with slip joints between the pipes and cast-steel extensions from the cylinder. These extensions are cross-connected to supply steam to the turbo feedwater heater. At the smokebox end the exhaust-pipe flange is bolted to a smokebox elbow connection

leading to the rear of two exhaust pipes. The flexible exhaust pipe from the front cylinders is made up of two sections of cast iron pipe which are joined by a long slip joint. The front section is fastened to the cylinder-saddle casting by a ball point, and the elbow at the rear end of the rear section has a ball seat in a spring casing attached to a bolting flange at the bottom of the smoke-box. This forms the base of the forward exhaust stand. The exhaust pipes are not lagged.

Steam distribution is effected by Walschaert valve motion which drives 11-in. valves with a maximum travel of $6\frac{1}{2}$ in. The reverse gear is an Alco type H. The valves are fitted with Hunt-Spiller gun-iron bull rings and Duplex sectional packing rings. The valve-chamber bushings are also of Hunt-Spiller gun iron.

The Running Gear

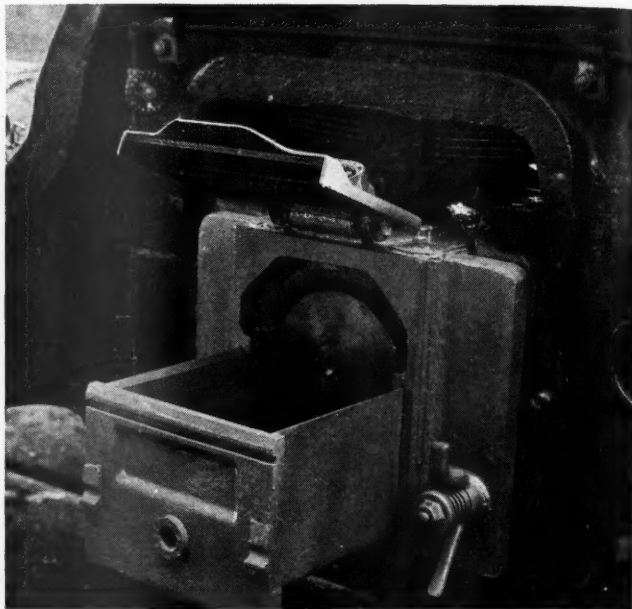
The main driving wheels are the third pair in each engine unit. The side rods have fixed bronze crank-pin bearings on the first and fourth pairs of driving wheels and floating bushings on the main and intermediate crank pins. The floating bronze bushings run in Hunt-Spiller gun-iron fixed bushings. The back end of the main rod also has a floating-bushing bearing.

The guides and crosshead are of the multiple-bearing type. The crossheads are cast steel and bronze rings inside prevent galling of the front end of the main rod. The pistons are the Locomotive Finished Material Company's lightweight alloy-steel type with combination bronze and iron packing rings.

The main and side rods, the driving axles, engine and trailer-truck axles, crank pins, wrist pins, knuckle pins, combination lever, union link, and radius-bar lifter are all of medium carbon steel normalized and drawn. The driving axles are hollow bored to a diameter of 3 in. The valve-motion eccentric crank is also of medium carbon steel, while the eccentric rod and link cheeks are of mild carbon steel. The link blocks are of mild steel, casehardened. Carbon-vanadium steel is used in the main and valve-stem crosshead keys. The guides are medium carbon steel, annealed.

Lubrication

There are four force-feed mechanical lubricators on each locomotive. Two are for journal-box oil and two

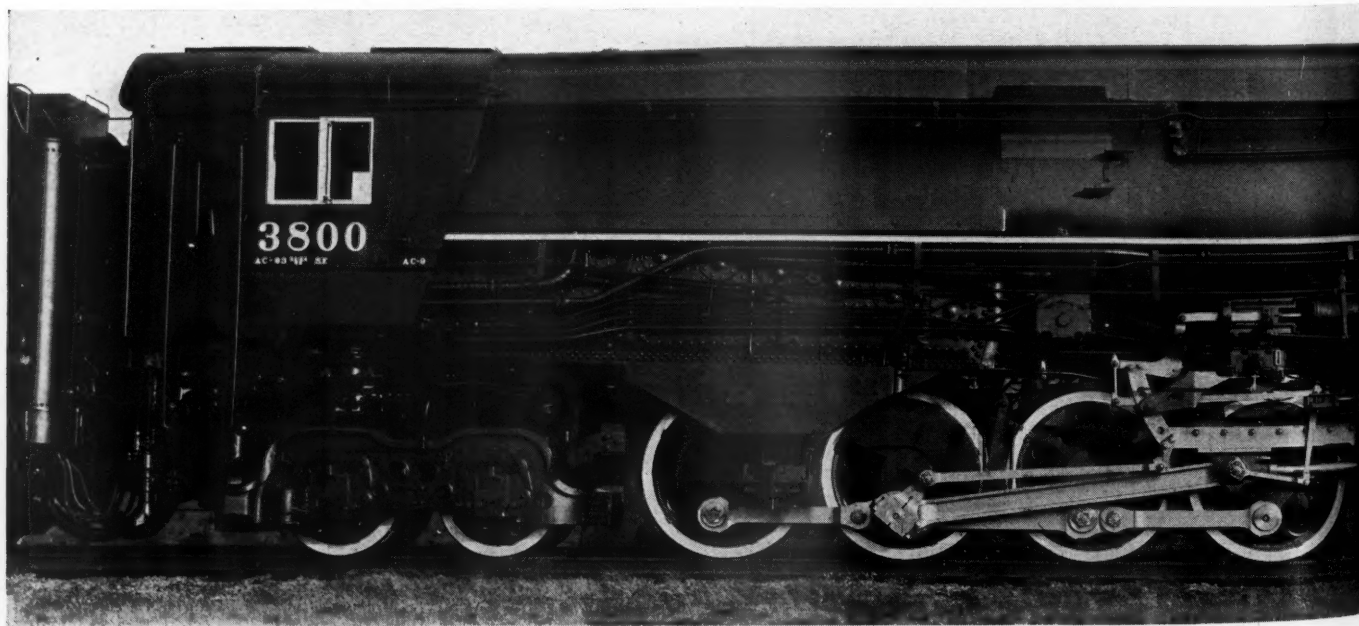


Trailing-Truck Journal Box Showing How the Oil Cellar Is Removed—The Same Type of Oil Lubrication Is Applied to the Driving Boxes

for valve oil. The former are each 36-pint Nathan DV-7 type, with 13 feeds. One of these is placed on the left side of each engine unit where it can be driven from the link of the valve motion. Eight feeds from each of these lubricators are used for driving-box journal lubrication, one feed leading to each driving box on the unit. Each of four feeds leads to a Nathan four-way oil distributor which serves the shoe and wedge faces for each pair of driving boxes. One feed, through a four-way distributor, lubricates the valve-rod crosshead guides.

A 20-pint Nathan DV-4 eight-feed mechanical lubricator is mounted on the right side of each engine unit. Feeds from these lubricators lead to the cylinders and steam chests. There are two feeds for the top of each main guide.

Fittings for Alemite lubrication are applied on the power reverse gear, the radial buffer, the side-rod knuckle pins, and the valve-motion parts. All crank pins and the eccentric-crank pins and rods are internally



pressure grease lubricated, and the rod ends are forged without grease cavities.

Cab and Cab Equipment

The steel cab is vestibuled and insulated below the windows. On six of the locomotives the insulation is 2 in. of Fiberglas and on the other six, Hairinsul. The cab windows are closed with Plexite non-shatter glass about 3/16 in. thick in the front windows and 3/8 in. thick in the sides and back. There is a seat and window for the head brakeman at the rear of the cab on the left side. All three cab seats have Dunlopillo sponge-rubber cushions and back rests.

There is a combination cab turret for both superheated and saturated steam. The superheated-steam section of the turret serves the blower, the stoker, the stoker engine, the stoker jets, and the soot blower. An auxiliary turret on the left side of the smokebox, through which the cab turret is supplied, also supplies superheated steam for the air compressors and the steam whistle. There is an air horn in addition to the steam whistle. The air-brake equipment is Westinghouse No. 8ET. Two 8 1/2-in. cross-compound air compressors are mounted on the smokebox front. A Westinghouse air intercooler is placed ahead of the smokebox.

Tender wheels, as well as driving tires, are provided with an air-controlled water-cooling system developed by the Southern Pacific. This wheel-cooling system operates automatically whenever brakes are applied. It consists of an outlet from the water tank, operated by an air-controlled valve with longitudinal pipes and lateral branches at each wheel, terminating in spraying nozzles. Whenever the engineman applies the brakes, he also opens the control valve of the wheel-cooling system, thus causing a sufficient amount of water to flow on the wheels to counteract the heating effect of the brake shoes. A cock conveniently located in the cab permits the engineman to cut-out the cooling system when it is not needed.

The Tender

The tender has a fuel and water capacity of 28 tons and 22,120 gallons, respectively. It is built up on a General Steel Castings water-bottom underframe and carried on two Buckeye six-wheel trucks. The engine

and tender coupling includes the unit draw and safety bars and Franklin E-2 type buffer.

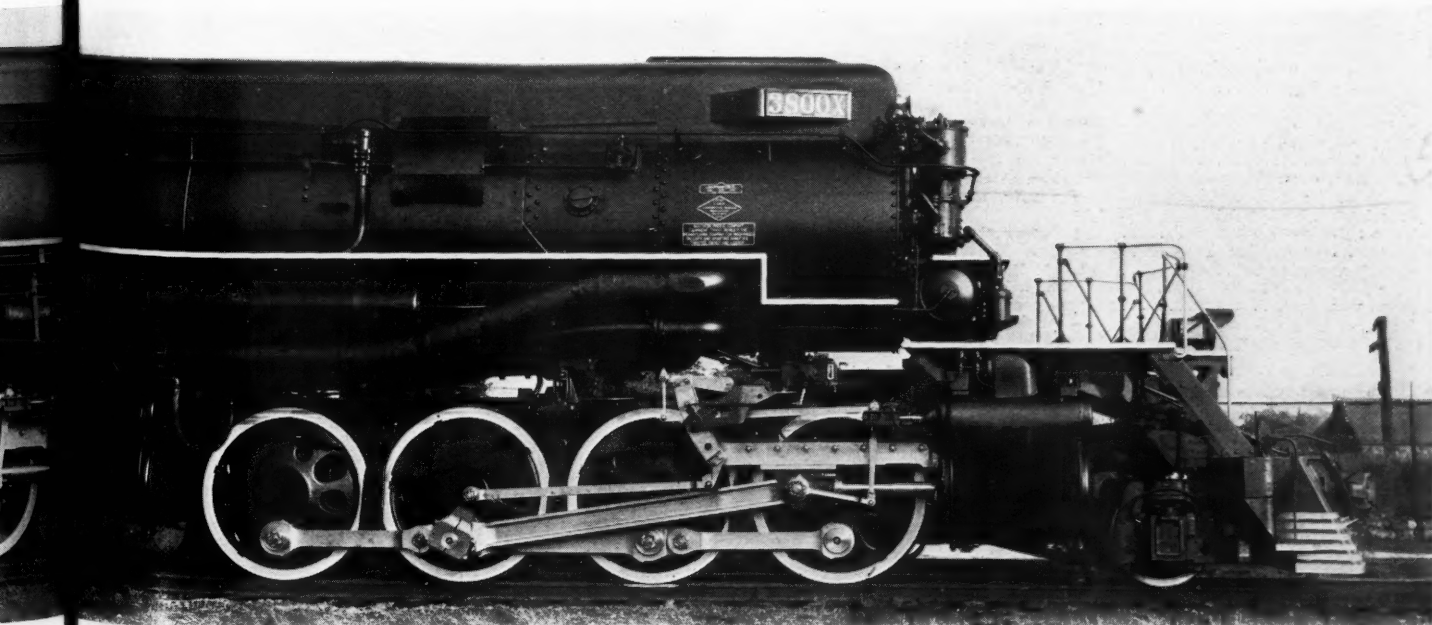
The tank sheets are welded to the cast-steel under-

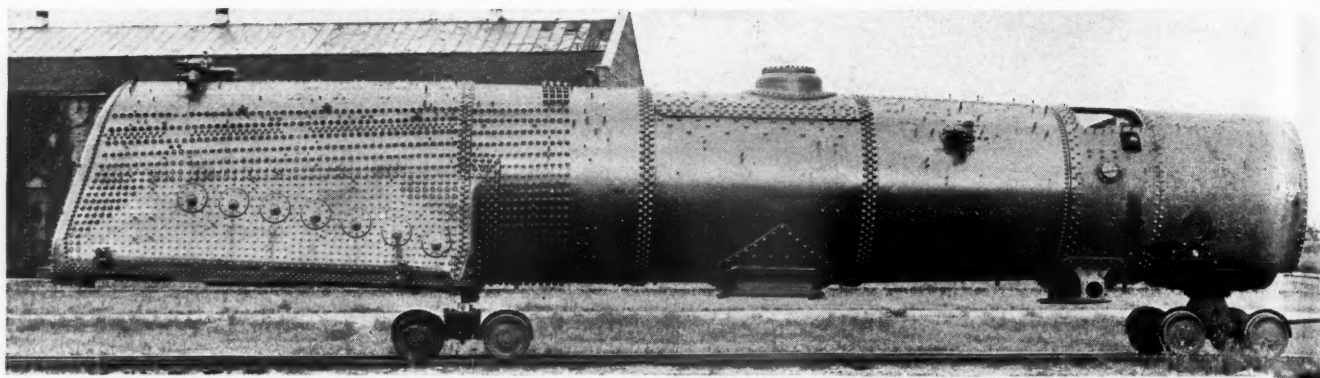
General Dimensions and Weights of the Southern Pacific 2-8-8-4 Type Locomotives Built by the Lima Locomotive Works

Railroad	Southern Pacific
Builder	Lima Locomotive Works, Inc.
Type of locomotive	2-8-8-4
Road class	AC-9
Road numbers	3800-3811, incl.
Date built	1939
Service	Freight and passenger
Rated tractive force, engine, lb.	124,300
Weights in working order, lb.:	
On drivers:	
Front	265,500
Back	265,700
Engine truck	48,300
Front trailer axle	48,900
Rear trailer axle	61,500
Total engine	689,900
Tender	400,700
Wheel bases, ft.-in.:	
Driving	44-7
Engine	66-3
Rigid	11-4
Engine and tender total	112-11 7/8
Driving wheels, diameter outside tires, in.	63 1/2
Cylinders, number, diameter and stroke, in.	4-24x32
Valve gear, type	Walschaert
Valves, piston type, size, in.	11
Maximum travel, in.	6 1/2
Boiler:	
Steam pressure, lb.	250
Diameter first ring, outside, in.:	
Front	97 1/16
Back	109 1/8
Firebox length, in.	205 3/4
Firebox width, in.	102 1/2
Combustion chamber, length, in.	58 1/2
Tubes, number and diameter, in.	86-2 1/2
Flues, number and diameter, in.	260-3 1/2
Length over tube sheets, ft.-in.	22-0
Fuel	Soft coal
Grate area, sq. ft.	139.3
Heating surfaces, sq. ft.:	
Firebox and comb. chamber	465
Circulator	124
Firebox, total	589
Tubes and flues	6,329
Evaporative total	6,918
Superheater	2,831
Comb. evap and superheat	9,749
Tender:	
Style	Rectangular
Water capacity, gal.	22,120
Fuel capacity, tons	28
Trucks	6-wheel

frame at the bottom. The remainder of the structure, however, is fabricated by riveting.

In the coal space is a Standard type DA coal pusher.





The Boiler Is Supported by Sliding Shoes Under the Rear End of the Firebox, by Expansion Plate Under the Front End of the Firebox, by the Rear Cylinder Saddle Under the Middle Barrel Course, and by Sliding Pad Under the Rear of the Smokebox

The boiler jacket, the skyline casing, the outside of the cab, except the roof, and the outside of the tender are finished in lacquer.

The principal dimensions and data are shown in one of the tables.

**Partial List of Materials and Equipment on the Southern Pacific
2-8-8-4 Type Locomotives Built by Lima**

Bed castings; engine and trailer trucks	General Steel Castings Corp., Eddystone, Pa.	Cab seat cushions	Dunlop Tire & Rubber Corp., Buffalo, N. Y.
Axles, engine-truck wheels, tires, main crank pins	Standard Steel Works Co., Burnham, Pa.	Cab window glass	American Window Glass Co., Pittsburgh, Pa.
Driving-wheel centers (Boxpok); trailing-wheel centers; cross-heads; cylinder heads; driving boxes; smokestack	Ohio Steel Foundry Co., Lima, Ohio	Stoker	Standard Stoker Co., Inc., New York
Driving and truck-box bearings; bronze shoes and wedges	Magnus Metal Div., National Lead Co., New York	Grates	Waugh Equipment Co., New York
Springs	American Locomotive Co., Railway Steel Spring Div., New York	Soot blowers	Superior Railway Products Corp., Pittsburgh, Pa.
Lateral motion device	American Locomotive Co., New York	Firedoor; sleeve joints	Franklin Railway Supply Co., Inc., New York
Coupler and front draw casting ..	National Malleable and Steel Castings Co., Cleveland, Ohio	Equalizer pins and bushings	Ex-Cell-O Corporation, Detroit, Mich.
Journal-box lids, engine-truck and trailer	The Symington-Gould Corp., Rochester, N. Y.	Injector	Nathan Manufacturing Co., New York
Spring type radial buffer	Franklin Railway Supply Co., Inc., New York	Exhaust-steam turbo feed-water heater	Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
Air-brake equipment	Westinghouse Air Brake Co., Wilmerding, Pa.	Steam-heat reducing valve and stop valve	Vapor Car Heating Co., Inc., Chicago
Force-feed lubrication; hydrostatic lubricators	Nathan Manufacturing Co., New York	Steam gage; steam-heat gage; stoker gage; safety valves	Ashton Valve Co., Boston, Mass.
Lubrication, soft grease	The Prime Manufacturing Co., Milwaukee, Wis.	Steam-pipe covering; smokebox tape Blow-off separator and discharge muffler	Union Asbestos & Rubber Co., Chicago
Flexible conduit on force-feed lubricator steam line	Barco Manufacturing Co., Chicago	Saturated steam valves	Wilson Engineering Corp., Chicago
Pistons	Locomotive Finished Material Co., Atchison, Kan.	Superheated steam valves	Crane Co., Chicago
Rod packing	Paxton-Mitchell Co., Omaha, Neb.	Water gage	Walworth Co., New York
Valve bull rings; piston-valve bushings; rod bushings; Duplex sectional valve packing rings and springs	Hunt-Spiller Manufacturing Corporation, Boston, Mass.	Back-pressure gage; water-level indicator	Nathan Manufacturing Co., New York
Reverse gear	American Locomotive Co., New York	Signal Foam-Meter	Locomotive Equipment Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn.
Staybolts, tell-tale flexible	Flannery Bolt Co., Bridgeville, Pa.	Speed recorder	Electro Chemical Engineering Corp., Subsidiary of Dearborn Chemical Company, Chicago
Staybolt iron	Ulster Iron Works, Dover, N. J.	Sander	Valve Pilot Corporation, New York
Circulator units; firebrick	American Arch Co., Inc., New York	Automatic drain cocks	Viloco Railway Equipment Co., Chicago
Circulator plugs	Huron Mfg. Co., Detroit, Mich.	Bell ringer	The Okadee Company, Chicago
Superheater; Tangential steam dryer; pyrometer	The Superheater Company, New York	Horn	Transportation Devices Corp., Indianapolis, Ind.
Throttle, front-end multiple	American Throttle Co., New York	Headlight and headlight wiring fixtures	The Leslie Co., Lyndhurst, N. J.
Smokebox netting	John A. Roebling's Sons Co., Trenton, N. J.	Headlight generator	Pyle-National Co., Chicago
Tubes and flues	(10) Jones & Laughlin Steel Corp., Pittsburgh, Pa.	Tender:	Sunbeam Electric Mfg. Co., Evansville, Ind.
Fusible drop plugs	(2) Pittsburgh Steel Co., Pittsburgh, Pa.	Frame	General Steel Castings Corp., Eddystone, Pa.
Firebox steel; tank steel in boiler; smokebox plates	Nathan Manufacturing Co., New York	Truck	Buckeye Steel Castings Co., Columbus, Ohio
Boiler flange steel	Bethlehem Steel Co., Bethlehem, Pa.	Wheels	Standard Steel Works Co., Burnham, Pa.
Boiler braces; drawbar and safety bar; drawbar pins	Carnegie-Illinois Steel Corp., Pittsburgh, Pa.	Journal-box lids	The Symington-Gould Corp., Rochester, N. Y.
Cab steel plate	Lockhart Iron & Steel Co., McKees Rocks, Pa.	Bearings	Magnus Metal Div., National Lead Co., New York
Cab insulation:	The Weirton Steel Co., Weirton, W. Va.	Brake shoes	American Brake Shoe & Foundry Co., New York
Fiberglass	(6) Gustin-Bacon Mfg. Co., Kansas City, Mo.	Clasp brakes	American Steel Foundries, Chicago
Hairinsul	(6) Johns-Manville Sales Corp., New York	Hand brakes; draft gear	W. H. Miner, Inc., Chicago
		Coupler and coupler yoke	National Malleable and Steel Castings Co., Cleveland, Ohio
		Tank steel	Jones & Laughlin Steel Corp., Pittsburgh, Pa.
		Dust guard	MacLean-Fogg Lock Nut Co., Chicago
		Coal pusher	Standard Stoker Co., New York
		Lacquer	(6) Pittsburgh Plate Glass Co., Pittsburgh, Pa.
			(6) E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

STEAM RAILWAYS UNDER CONSTRUCTION or projected in Latin America at the present time total 2,830 miles, according to a survey of the transportation division of the United States Department of Commerce, issued November 10. These estimates, which refer only to current projects and do not include long-range plans, comprise 1,260 miles of lines already under construction, while the remainder are parts of projects which will be initiated in the immediate future. In addition to these totals, 716 miles of electrified railroad lines are now under construction or projected in Brazil.



The Municipal Bridge, With Its Highway Deck Above Its Railroad Deck, Now Provides a Route to the St. Louis Union Station for All Eastern Roads

St. Louis Municipal Bridge Is Ready for Use

Completion of Signaling on railroad deck prepares for service structure built by city 22 years ago

By M. H. Doyne

Consulting Engineer, St. Louis, Mo.

THE utilization of the St. Louis Municipal bridge across the Mississippi river as a railroad facility for the general movement of passenger freight traffic by eastern trunk lines now appears in the offing. With the completion this fall of the last of the facilities necessary for railway operation, this route will be available for use in substitution for the existing Eads Bridge route, which since 1876 has served as the major river crossing for passenger trains entering St. Louis from points east of the river. The Eads Bridge route was supplemented in 1893 by the Merchants bridge, three miles upstream, and the latter has served since as the major river crossing for those eastern roads reaching St. Louis from the north, including the Big Four, the Burlington, the Wabash, the Chicago & Eastern Illinois and the Alton. Prior to the installation of air-conditioning for passenger cars, the better trains of the Pennsylvania and the Baltimore & Ohio also used the Merchants bridge in order to avoid the Eads tunnel.

The city of St. Louis, after numerous interruptions since 1906 when the first bonds were voted to construct the Municipal bridge, is now completing the installation of automatic signals and interlocking facilities at a cost of about \$450,000, which will insure the safe operation and control of all trains using the bridge and the various approaches that were constructed from time to time to make the bridge available to all roads reaching the east shore of the Mississippi river opposite St. Louis.

The accompanying plan shows the locations of the three

bridges used by the steam railroads to reach St. Louis from the Illinois side of the river. It indicates how the Municipal bridge will serve to provide a direct route to the St. Louis Union station.

The History of the Structure

A review of the history of this new facility is in order as an explanation of the reasons for the delay of some 33 years in providing a structure that from its inception was intended for the use of all railroads reaching St. Louis from the east. With the completion of the signal installation, the city's investment in this facility will be about \$10,500,000, which includes the cost of the highway deck and approaches thereto. It is perhaps well to point out here that the highway deck has been in use since 1917. The railroad deck also has been in continuous use since 1929 by two terminal switching roads, the Alton & Southern and the Manufacturers' Railway.

When the first bonds were voted for the bridge construction, the eastern railroads were then using both the Eads bridge and the Merchants bridge to reach the St. Louis Union station. The construction of a new bridge was urged by those interests who for many years felt that the city was being improperly burdened by the imposition of the so-called "arbitrary" (river crossing charge) by the Terminal Railroad Association, although this charge has been confined to traffic moving to and



Looking East From the Bridge Along the Highway and Railroad Approaches on the East St. Louis Side of the River

from points within 100 miles of St. Louis. The purpose of constructing the bridge was to eliminate the added charge on this traffic for crossing the river to reach St. Louis.

The location of the bridge in line with the Mill Creek valley was prompted by a desire to improve the railroad approach between the Illinois shore and the railroad terminals in St. Louis. The selected location offered an escape for passenger trains from the objectionable tunnel route provided by the Eads bridge. It also offered a less congested route for those trains that used the Merchants bridge and the surface tracks through the industrial and freight house district along the west bank of the river.

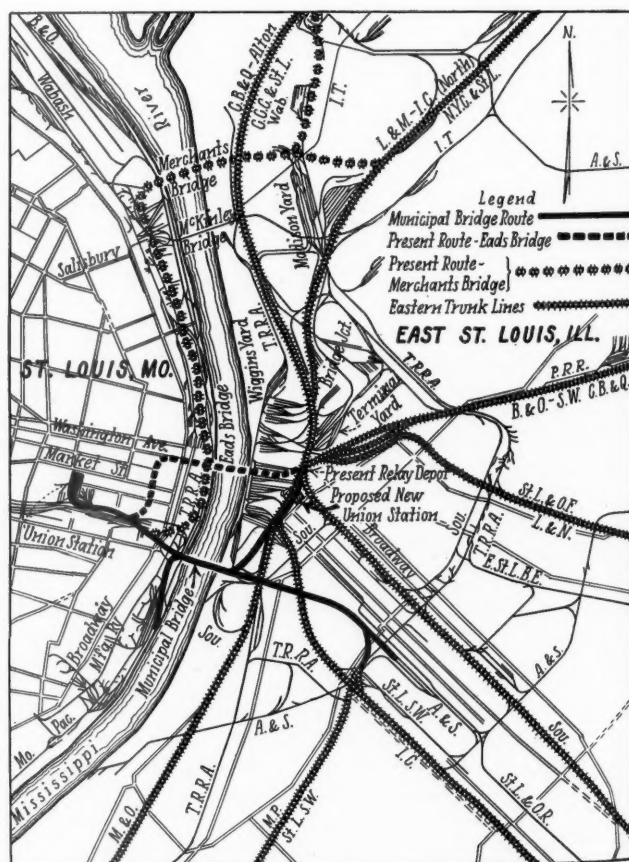
Contracts were awarded for the construction of the river spans in 1909. When the available funds were exhausted in 1912, the bridge stood with no approaches to the east and with only a part of the western approach constructed. Later, in 1914, the city voted \$2,750,000 to complete the western approach and construct the eastern approach. The highway deck was opened to the public in 1917 and the railroad deck was completed in the spring of 1918. The eastern approach connected with the tracks of the Alton & Southern, no connections being made with any of the eastern trunk lines or with the tracks of the Terminal Railroad Association on the Illinois shore. The western approach connected with the tracks of the Terminal Railroad Association leading to the St. Louis Union station.

All of the eastern trunk lines cross the Alton & Southern at grade so that by building track connections at the intersections, it was feasible to use the bridge in connection with the Alton & Southern to reach the St. Louis Union station. To do this, however, would have required all trains to pass up the relay depot in East St. Louis near the east end of the Eads bridge. There was, moreover, another obstacle to the use of the city's bridge. In its desire to put St. Louis on a rate parity with East St. Louis, an ordinance was passed by the

Board of Aldermen in 1917 which provided, among other things, that the rates to St. Louis should not exceed those to East St. Louis. Although the ordinance was invalid because it attempted to legislate on matters involving interstate commerce, none of the trunk lines felt disposed to use the bridge as long as the ordinance remained in effect and also until a more desirable route was provided than that offered via the Alton & Southern.

When the railroads were turned back to private operation in 1920, a very determined effort was made to get all of them to use the Municipal bridge. A committee representing the railroads and the business and civic interests undertook to study the situation with a view to recommending a program of terminal improvements to expedite the movement of freight and passenger traffic through the St. Louis gateway. Among the recommendations submitted in 1922 was the construction of a number of additional approaches to the Municipal bridge. (The *Railway Age* of July 8, 1922, page 63, discusses the committee's report fully.) The bridge and approaches as now constructed conform substantially to the 1922 recommendations.

The 1922 recommendations having met with the general approval of all concerned, the city was prevailed upon to provide funds with which to carry out the program. Although in 1923, \$1,500,000 was voted for the construction of the southern approach, it was not until 1927 that the construction was authorized by ordinance. The construction of this approach was completed in 1929 and made it possible for the Manufacturers' Railway and the Alton & Southern to move traffic over the bridge. At the same time, the 1917 ordinance which attempted to regulate tariff charges was repealed, and a new



This Plan, Showing the Three Bridges Used by the Steam Railways Between St. Louis, Mo., and East St. Louis, Ill., Indicates How the Municipal Bridge Provides a Direct Route to the St. Louis Union Station

ordinance was passed fixing the charges for the use of the bridge on a unit basis designed to cover the cost of maintenance, operation and fixed charges.

Once operations had begun over the bridge, negotia-



The Decks of the Bridge and Its Approaches Are of Wolman Treated Timber. While the Track Over the Entire Structure Is Equipped With GEO Fastenings

tions between the city and the Terminal Railroad Association for the full use of the bridge were renewed. In September, 1930, a contract was executed which provided for the construction of all the necessary approaches, with funds to be advanced by the Terminal Railroad Association. The work was well under way and about \$1,400,000 thus advanced had been expended when, because of the economic depression in 1932, the Terminal Railroad Association advised the city that it would be unable to advance additional funds.

Work Resumed Again in 1936

The work was halted again and it was not until 1936 that the city was able to provide the necessary funds, with the aid of a PWA grant, to resume construction. The last of the signal work is now nearing completion and before long the bridge will be available for use by the Pennsylvania, the New York Central, the Baltimore & Ohio and the Missouri Pacific lines, the latter road having already obtained the approval of the Interstate Commerce Commission for its use in replacement of the ferry service which it has long operated in transferring cars moving between its east and west side lines. There is now before the Board of Aldermen a bill establishing the staff necessary to supervise operation over the bridge and approaches.

The general program involving the utilization of the Municipal bridge contemplates the construction of a new union passenger station in East St. Louis, about 1,500 ft. south of the present relay depot. The Terminal Railroad Association has acquired the right-of-way for this station and placed about 1,000,000 cu. yd. of sand fill for the elevated station tracks before construction was interrupted in 1932.

In 1937 another step toward the completion of the program was undertaken. This involved the removal of the old Broadway viaduct over the tracks leading to the relay depot from the south, and the raising of the tracks between relay depot and the new station layout. This work required the rearrangement of all tracks in the immediate vicinity, including the approach tracks and yards leads of the Louisville & Nashville, the Big Four,

the Southern and the Illinois Central freight terminals. In the rearrangement of these facilities, Broadway was carried under the tracks through an underpass.

The new Municipal bridge approach may be used now in conjunction with relay depot and until the new union station is constructed, without any substantial change in the present method of operating out of East St. Louis except that it will no longer be necessary to use the Eads bridge and tunnel.

Many interesting and some difficult engineering problems were encountered in the construction of this structure, a condition to be expected on such a large project involving property and facilities of many different corporate interests, all located in the heart of congested railroad terminals. The maintenance of railroad traffic during construction was, of course, the major consideration and because of this many obstacles were introduced.

One of the early problems was the reconstruction of the supporting structure of the highway deck of the Municipal bridge for several hundred feet east of the east shore pier to provide the necessary statutory clearances where the approach tracks passed under the highway deck, in addition to making proper provision for connecting the structural members of the approach to the main structure. It was necessary also to relocate Cahokia creek. The embankment for the passenger approach and for the proposed station layout was placed as a hydraulic fill, the sand being pumped from the Mississippi river, a distance of about three-quarters of a mile.

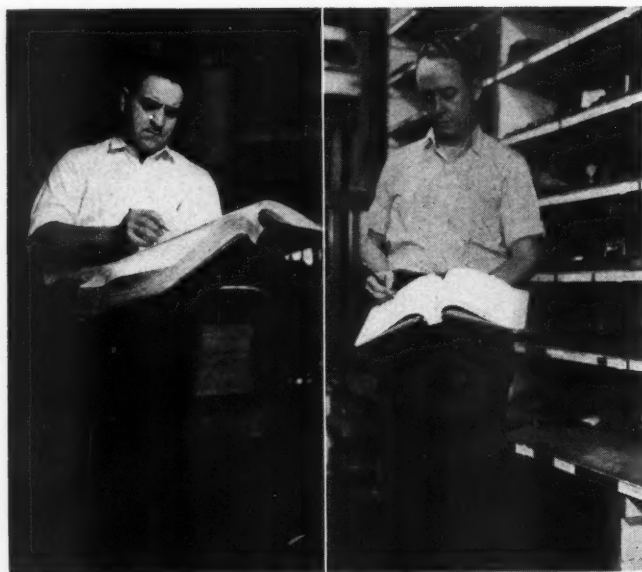
All of the track forming the passenger train route between Broadway, East St. Louis, and Seventh street, St. Louis, is of GEO construction, using the 100-lb. A. S. C. E. rail. In addition to the 2½ miles of double track covered by this route, there are 18 units of special trackwork, including turnouts, crossovers, double slip switches, etc., all of GEO construction. This type of track construction was decided upon to minimize the otherwise heavy deck and track maintenance and renewal costs that the anticipated heavy traffic over this route would require if standard track construction were adopted.

To provide a good deck grade, all ties as well as other deck timbers, were preframed from detail plans with tolerance limited to 1/16 in. It was necessary for the city to set up its own framing plant at the tie treating plant, about 100 miles from St. Louis. In the latest work, 3,000,000 ft. b. m. of dense southern yellow pine was used. Of this total, 2,600,000 bd. ft. represented bridge ties and guard timbers. After framing, the deck timbers were treated with Wolman salts before being shipped to the bridge.

The completion of the bridge and approaches since 1927 has been carried on originally under the general direction of E. R. Kinsey, president of the Board of Public Service, city of St. Louis, until April, 1933, and since then by his successor in office, Baxter L. Brown, with A. R. Ross, his associate. The planning and supervision of construction have been in charge of C. E. Smith & Co., consulting engineers of St. Louis, formerly headed by C. E. Smith, now vice-president of the New York, New Haven & Hartford, and since 1928 by the writer, who was associated with Mr. Smith and succeeded him as head of the engineering firm.

THE SWEDISH STATE RAILWAYS HAVE INSTALLED 14 ticket-printing machines in the Central Railroad Station at Stockholm. They are of three types—one stenciling 1,500 station names, one 2,000 names and the third 15 names, respectively. The last-mentioned type is called a "speed printer" and is capable of issuing 200 tickets a minute.

Rock Island Develops New Records for Storekeeping



The Old and the New in Stock Books

THE store department of the Rock Island is now engaged in printing more than a million forms preparatory to equipping all storehouses with new stock books, effective January 1. The forms are being prepared in multiples of 30, at the rate of 18,000 sheets per day on a high speed duplicating machine and will be assembled in loose leaf binders of the latest type to form single-item-per-page stock books good for six years, replacing two-year books of the multiple type. The new books are the result of two years of experimental work with single-item books at local and division stores and studies which had previously led the road to abandon the master stock book. The new books will each be 5 to 10 lb. lighter than the old books and their adoption gives the Rock Island the distinction of being one of the first large railroads to standardize entirely on single-item-records for keeping stock.

Good for Six Years

Sheets for the new stock books are $7\frac{1}{4}$ in. wide and $8\frac{1}{2}$ in. long, including the side margin for binding and they are ruled on both sides. One side is good for three years and the other is good for three more years. The description is printed in the upper right hand corner of each page and the stock record for 12 consecutive months reads down the page. The quantity of material on hand is entered in the first vertical column and the amount due and the amount owned each month are entered in the second column. The amount ordered is marked in the third column and the number of the requisition is placed in the fourth column. At the top of these columns is a place for the year and the average quantity of material consumed monthly during the year.

Annual consumption is determined by adding the quantity ordered during the 12 months to the amount on hand at the first of the year and subtracting the balance on hand and due at the end of the year. It is easy to

Equip all stores with one-item stock books—Master stock book retired—
Rapid duplicating

make the calculation without mistakes when quantities ordered are all in the same column. No record is made of the current average monthly consumption or the consumption during the last 90 days. Such information can be readily seen by reading down the page and the corresponding information for other years can be obtained by reading across the page a total distance of only $7\frac{1}{2}$ in. Surplus and direct shipments are shown in red ink in the "ordered" column. The year is not printed so that records of each item added to the stock of any stores during the six-year life of the book need not be started in columns corresponding with those in which the same year's record of other stock is kept but can be started in the first column, thus avoiding blank spaces and reducing the number of pages to be renewed at any one time.

Mechanical Reproduction

An approved description of every item of material on the railroad is kept in the general store and every stock record sheet is completely labelled before being assembled in the books. The master records are kept in a card file and consist of slips of paper 3 in. wide and 5 in. long. The description is typewritten so that an indelible ink impression is made on the reverse side for duplicating purposes. This information is reproduced on the stock book sheets by attaching the slips to the revolving drum of a spirit duplicating machine and letting the machine run until the required number of sheets are printed. The machine is electrically operated and duplicates at the rate of 70 impressions per minute.

Every storekeeper will receive a sheet for each item of material on the railroad but will assemble in book form only the sheets pertaining to the items of material in his stock. The other sheets will be filed. When new items are added to stock, the corresponding stock record sheets will be taken from the file and inserted in their proper place in the stock books. If items are removed from stock the corresponding sheets will be removed from the books and filed. Revisions in the descriptions will be made by placing a new sheet in the stock book instead of revising the description with pen and ink. If a page is spoiled a new sheet is furnished. In this way the books will be kept up to date with the least inconvenience and loss of time and all materials will be listed in their proper order. To avoid repeating the full description of each item of material in a general class, a yellow form with full details is used to identify the first item of material in the class and the succeeding items are listed on white forms which carry only the information necessary to distinguish the material from other items in the same class. This arrangement is adequate for stock keeping and requisition writing and

makes it easy to locate the different sections of the stock book.

Master Book Out

The new stock books are considered an improvement on the books they superseded and the master stock book system which preceded them. The master system required a uniform set of books at all division stores and a duplicate set at the general store. Each division book had a set of key sheets stamped with a description of the material, another set of sheets for the stock record, and a duplicate set of sheets from which coupons could be torn each month for posting in the master book at the general stores, with corresponding records from other stores. The pages in these books were 17½ by 18½ in. and had 21 lines in which to describe material and they were good for two years, one year on each side. Some of these books, with their duplicate sheets for master records, weighed as much as 15 lb. which was inconvenient for one man to handle alone when taking stock. It was also costing the road about \$3,000 per year to furnish the duplicate sheets for the stock books, insert carbon paper in the books and tear out coupons at division stores each month and to maintain the master book at the general store.

With the speeding up of transportation the necessity for large stocks at outlying stores ceased to exist. District stores were discontinued entirely and material is all shipped to division stores direct from the general store and all outlying stocks have been greatly reduced. Any surplus materials at division stores is either sent immediately to the general store or, in case of large bulky materials, reported to the general stores so that the need of the master stock books for locating surplus stocks no longer exists. Also the installation of telephones at various terminals in recent years makes it possible, in

case of emergency, to locate materials in stock immediately. This made it possible to discontinue the line stock books entirely in 1937.

Old Books Unwieldy

The big books, however, had other features which the Rock Island felt could be improved upon. While each page had 21 lines in which to describe material, the description of many items took 5 to 10 lines and some pages listed only five items of stock. These stock lists in the books, moreover, included all items of material, whether the material was carried at every store, with the result that some pages of the stock books were wholly unused at some stores and others only partially used. Ten pages of a typical stock book with 221 lines listed only 121 items and only 44 of these items were carried in stock, an average of only 12 listings per page of 21 lines, and an average of only 4.4 items per page carried in stock. It also took two sheets to keep the record, a narrow sheet describing the material and a wide sheet for quantities. The spaces for each month's information were cramped; yet the record of stock in the twelfth month was 12 in. removed from the description. This increased the risk of recording inventories on the wrong line. Data for consecutive months, furthermore, were not organized so that they could be easily totalled or differentiated from other information. Once these stock books were written, it was next to impossible to enter new items in the logical place and it was necessary to make revisions in writing. In addition, local stores had to write their books.

The experimenting with the single item page books began two years ago at 13 local stores, each carrying from 3,500 to 9,500 items of stock, and proved so successful after the first six months that the experiments were extended to a limited number of classes in the



Upper — Printed Stock Book Sheets and Complete File of Stock Sheets for Reference and Duplicating



Left — Reproducing Descriptions on Stock Book Sheets— Below, Typing Standard Descriptions of Stock Items for Reproducing Stock Book Sheets



division stores and the arrangement of the new books reflects the experience in these trials and also discussions of the subject with other railroads. The new books will cost the railroad \$3,650, counting paper stock, labor, supplies, binders and a new duplicating machine and will last six years. The cost of the previous books for six years was \$5,950 and each set was good for only two years. On a six-year basis, this represents a saving of approximately \$367 per year in favor of the new books. The duplicating machine will also be available for other duplicating work.

A Complete Catalog

With the new books, which will weigh not to exceed 5 lb. each, one man can take stock without trouble and the books will also be easier to handle when preparing requisitions. The six-year record not only relieves the stores from writing an entirely new set of stock books every two years, but simplifies the problem of determining the future consumption of material, reduces the need of referring to old files for the age or previous consump-

separate shipments and also the date and car number of these shipments. This does away with the preparation of other forms for use when material is back-ordered. The requisitions are made in quadruplicate and when storekeepers fill a requisition one copy is returned to the originating store as a notice of shipment. The other copies are used when shipping material which could not be supplied in the first shipments. The original is held by the stockman until the requisition is completely filled and is then filed in the office. If the material ordered on these requisitions cannot be supplied from general stock the requisitions are sent to the purchasing department without rewriting at the general stores.

If, on the other hand, items to be ordered by division storekeepers belong to classes of material which are regularly purchased from standard sources for shipment direct to the ordering stores, a modified form of the combined-purchase order form is used, the storekeeper producing at one writing his requisition on the purchasing department and also a form which has only to be addressed and signed by the purchasing department to become the railroads' purchase order. The requisition in

STORE		PRICE	ACCOUNTING			MATERIAL			
			CLASS	UNIT	CODE	CLASS	UNIT	WEIGHT	
		.0753	11	Lb.	4	11	Es.	4.50	
ORDER FROM		DESCRIPTION							
		Collar bolts for side rods, to be made from nickel chrome steel SAE 3130, heat treated, BP-9820-B, 9-26-38, to have the letter "S" stamped on head of each bolt.							
		1-1/4 x 10-11/16"							
		PURPOSE	Locomotives 1600-1900-2000 Shop Made Class front						
ENTER SURPLUS AND DIRECT SHIPMENTS IN RED IN ORDERED COLUMN									
FORM 1033									
YEAR	CONSUMP.				YEAR	CONSUMP.			
MONTH	ON HAND	DUE	ORDERED	REQ'N.	MONTH	ON HAND	DUE	ORDERED	REQ'N.
JAN.					JAN.				
FEB.					FEB.				
MAR.					MAR.				
APR.					APR.				
MAY					MAY				
JUNE					JUNE				
JULY					JULY				
AUG.					AUG.				
SEPT.					SEPT.				
OCT.					OCT.				
NOV.					NOV.				
DEC.					DEC.				

The New Stock Record
— One Item per Page

tion of material, and promotes a better analysis of stock for the purpose of ordering materials, ascertaining surpluses and detecting irregularities or waste in consumption. These benefits are in addition to the advantages arising from the compactness of the information and the facility of making corrections and keeping the books in order and up to date.

Back Orders Reduced

During the last four years this road has also revised its forms for replenishing stock and purchasing material. The forms used by local and division storekeepers when ordering materials do not require reports of the quantity of items on hand, due and consumed and no provision is made for showing the cost of material on the requisition.

Each requisition, however, has six columns in which to enter the quantity and weight of as many as three

this case has several columns which are used by the purchasing department to verify the receipt of invoices for the material and the same columns in the storekeeper's copy are used to check receipts. These forms and procedure, although developed four years ago, have withstood the re-examination of supply practices and their use has been satisfactorily co-ordinated with the operation of the new stock books, according to E. G. Roberts, general storekeeper, under whose direction the new stock books are being introduced.

WHEN THE WASHINGTON "REDSKINS" AND THE NEW YORK "GIANTS" played professional football in New York City recently, the Pennsylvania operated 14 special trains directly from Washington, D. C., to New York to accommodate the fans. The trains were run at short intervals, the first arriving in New York at 10:25 a. m. and the last shortly before game time.

Close-Up View of One of the Challenger Merchandise-Service Freight Cars



Union Pacific Provides New Merchandise Service

Schedules greatly reduced and cars specially designed for high speeds used in fleet of fast freight trains

WHEN the Union Pacific inaugurated its Challenger coach trains a few years ago, it began a revolution in passenger service. The inauguration last spring of Challenger merchandise service is perhaps the forerunner of a similar revolution in l.c.l. service. Among other developments in this high-speed service is the building of 100 freight cars to be used especially for this purpose. Although this service has been in operation only a relative few months, it has already proved its worth as a traffic producer and has increased the volume of merchandise handled by the U. P. between the points where the trains are operated.

"We Asked the Shippers"

As is stated in the advertising literature for this new service, the Union Pacific asked the shippers what they wanted. This was no perfunctory survey among a few large shippers. Backed by the co-operation of the employees in every department, a campaign was inaugurated under the direction of the president of the U. P. to have calls made on every shipper. The larger companies were contacted by the regular force of traffic solicitors, while the smaller shippers and receivers—such as the man at the corner drug store and the filling station owner—were visited by enginemen and conductors, clerks and shopmen, and other railway employees, because it was decided that the new service could not be sold to shippers unless the employees were also sold on its benefits. The results of this mass symposium on what the shipper wants, as obtained from thousands of reports of

calls, were analyzed in the general traffic department, under the personal direction of the vice-president in charge of traffic, and the service was then established to meet the wishes of the shippers as nearly as possible.

The number of suggestions received from shippers as to what should be done to induce them to ship by rail also ran into the thousands, but they were boiled down to the following basic principles:

Speeding up train schedules.

Changing schedules to fit better into local shipping customs, conveniences and necessities.

Establishing pick-up and delivery service at additional points and revising such service in other places.

Inaugurating fast, overnight service from jobbing centers to their trade territory.

Changing certain rates, classifications and minimums to bring about a general tariff simplification.

The shippers exhibited an almost unanimous preference for shipping by rail, and specifically by U. P., if their needs were properly satisfied, and gave the following reasons therefor:

Courteous, attentive service by railway employees.

A financially reliable, sound organization.

Reliability of rail service in all sorts of weather.

Rail employees were good neighbors in their communities, taking part in civic affairs and being good customers for local merchants.

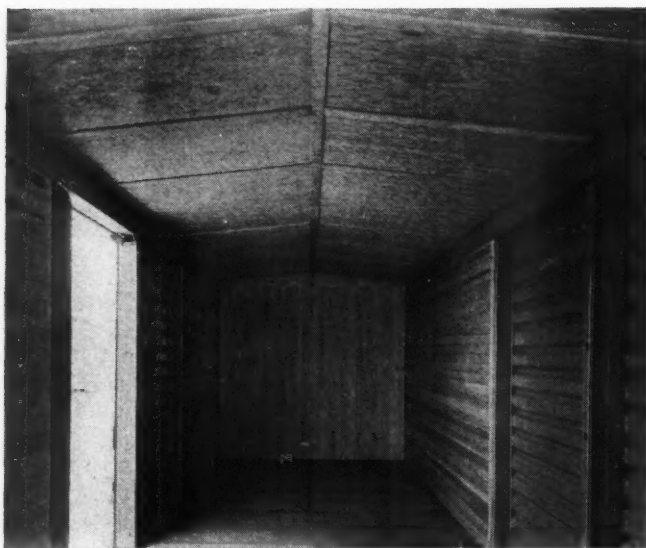
Railway taxes support schools, institutions, highway programs and other improvements.

With this vast source of information as to what the shippers want, the Union Pacific revised its merchan-

dise service to meet such needs insofar as possible. The basis of the new program was the establishment of a fleet of fast new trains giving overnight service to points hundreds of miles away.

These new trains, in conjunction with existing trains whose schedules were accelerated, give the high-speed freight service desired.

Fast merchandise trains from Omaha now give first morning delivery to points as far west as the Nebraska-Colorado state line, approximately 350 miles. First day delivery is made as far west as La Salle, Colo., 513 miles, and second morning delivery at points beyond, as well as at all points along the main line in Wyoming. Another daily service leaves Omaha at 8 a. m., giving same day



Interior of a Challenger Merchandise Car with Douglas Fir Side and End Lining and Plywood Ceiling

delivery as far west as Grand Island, Neb., as well as to points on the Columbus branch. Another train leaving Omaha at midnight gives first morning delivery to Kansas City.

New service has also been inaugurated from Kansas City, giving first morning delivery to main and branch line points in Kansas, approximately to the Kansas-Colorado line, and also to Nebraska cities. Overnight service from St. Joseph, Mo., gives first morning delivery to Nebraska points, and second morning to Denver and to Wyoming points.

A merchandise train leaving Denver at 6:45 p. m. gives first morning delivery at all points in Colorado on the Denver-Kansas City line, and to Kansas points as far east as Ellis, 337 miles from Denver. First day delivery is made as far east as Salina, Kan., and second morning at Kansas City. Another train from Denver gives first morning delivery to all northern Colorado points and to main line points as far east as North Platte, Nebr. A third Denver train makes first morning delivery to points as far west as Green River, Wyo., and second morning to Salt Lake City and to Pocatello, Idaho.

Far West Services

A new train from Salt Lake City makes first morning delivery on the Portland line as far west as Twin Falls and to almost all of the Idaho branch line points. Another fast train from Salt Lake City makes first morning delivery at Las Vegas, Nev., 450 miles, and second

morning at Los Angeles. A train from Los Angeles in the opposite direction also makes first morning delivery at Las Vegas, 335 miles, and arrives in Salt Lake City the same evening in time to connect with the fast train from there to Idaho points, thus providing second morning delivery from Los Angeles to Twin Falls, Idaho, for example, a distance of nearly 1,100 miles.

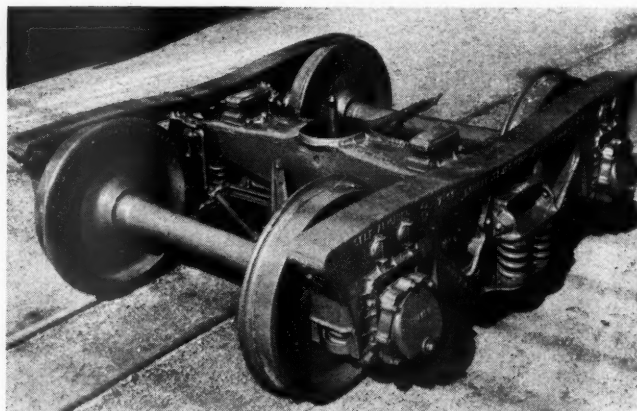
A new train from Portland makes early first morning delivery as far east as Boise, Idaho, 491 miles. Through connecting services, first morning delivery is made by this train to nearly all of the branch line points in Oregon and Washington, as well as to Spokane.

Fast Trains—Unique Equipment

The Portland-Boise run requires an overall average speed of better than 40 m. p. h. for nearly 500 miles. Such fast freight runs naturally led the U. P. to a consideration of special equipment, and, as a result, the railway has recently built and placed in service 100 fifty-ton fast-service merchandise freight cars, especially designed for effective handling of l. c. l. shipments on fast train schedules. These cars are the forerunner of similar cars to be installed on all the fast runs. The cars have high-speed trucks, steam and signal train lines, double doors to facilitate rapid loading and unloading of large packages, and are painted quite differently from the ordinary box car.

Features of the Car Construction

The general dimensions of the new Class B-50-25 car are as follows: inside length, 40 ft. 6 in.; inside width,



One of the Symington-Gould High-Speed Freight-Car Trucks Equipped with Timken Roller Bearings

9 ft. 2 in.; inside height, 8 ft. 6 in.; cubic capacity, 3,180 cu. ft.; and lightweight of car, 44,200 lb.

The trucks are Symington-Gould, double truss, with pedestal-type journal boxes, and are spring-plankless and self-aligning. Hardened wear plates are provided for pedestal guides and bolster. Side frames, bolsters, and journal boxes are Grade B cast steel. Journal springs consist of a coil and semi-elliptic parallel spring groups. Bolster springs are the conventional A. A. R. group with one snubber spring in each group. The trucks have constant-contact resilient side bearings, No. 3 brake beams, flexible supports, sliding chairs, and bottom-rod guards, Schaefer brake hangers and wear plates, lightweight brake levers and bottom rods. Side frames have bottom tie rods with anti-rattling pin connections. One-wear wrought-steel wheels are used. Ninety cars are

equipped with plain bearings and ten cars with Timken roller bearings.

The underframes, fabricated by the Mt. Vernon Car Manufacturing Company, Mt. Vernon, Ill., are of welded construction with A. A. R. Z-section center sills of copper-bearing, open-hearth steel; all other parts of the underframe are of low alloy high-tensile steel. Four

Partial List of Specialties on 100 U. P. Challenger Merchandise Freight Cars

Car builder	Union Pacific Shops, Omaha, Neb.
Welded underframes	Mt. Vernon Car Company, Mt. Vernon, Ill.
Car sides and doors	Youngstown Steel Door Company, Chicago
Car ends and roofs	Standard Railway Equipment Manufacturing Company, Chicago
High-speed trucks	Symington-Gould Corporation, Rochester, N. Y.
One-wear steel wheels	Bethlehem Steel Company, Bethlehem, Pa.
Timken roller bearings (10 cars) ..	Timken Roller Bearing Company, Canton, Ohio
Truck springs	Railway Steel Spring Division, American Locomotive Company, New York
Truck springs and snubbers	Symington-Gould Corporation, Rochester, N. Y.
Brake hangers and rods	Schaefer Equipment Company, Pittsburgh, Pa.
Couplers	National Malleable & Steel Castings Company, Cleveland, Ohio
Coupler yokes	Omaha Steel Works, Omaha, Neb.
Draft gears, A.A.R. certified	Cardwell-Westinghouse Company, Chicago
Steam heat connectors	Vapor Car Heating Company, Chicago
Lightweight door fixtures	Camel Company, Chicago
Plywood inside ceiling	Harbor Plywood Corporation, Hoquiam, Wash.
Vertical-wheel hand brakes	Ajax Hand Brake Company, Chicago
Type AB air brakes	Westinghouse Air Brake Company, Wilmerding, Pa.

floor supports are provided instead of the conventional two, to afford stronger floor support for concentrated loads. The floor supports extend from bolster to bolster. The coupler striker and carrier are of built-up welded construction; front draft lugs are forged steel and welded to the center sill. The combined center-filler and rear draft lugs are high-tensile cast steel, riveted to the underframe. Center plates are forged steel, riveted and welded to the underframe.

Superstructure of Riveted Construction

The superstructure is of riveted construction, using both copper-bearing, open-hearth steel and low-alloy high-tensile steel, and is similar to the A. A. R. design with slight modifications. Low-alloy, high-tensile steel is used for the side sills, side posts, door posts, W-corner posts and Dreadnaught steel ends. The intermediate side sheets are of 0.067 in. low-alloy high-tensile steel. The side plate is a Yoder mill section of copper-bearing, open-hearth steel. A departure from the conventional construction is the use of end side sheets of greater thickness than the intermediate side sheets, and the addition of furring-post angles which extend from the side sill to the side plate. The end side sheets are 0.10-in. copper-bearing open-hearth steel, and the furring-post connections are 2½-in. by 2-in. by ⅛-in. rolled angles. The corrugated ends have large radius corners which, with the W corner-post construction, heavier end side sheets and furring-post angles, materially stiffen the car body, with little weight added to the car.

The double doors are staggered and provide a 12-ft. clear opening. The doors are Youngstown corrugated intermediate-weight design, with Camel lightweight roller-lift fixtures. Roofs are Murphy improved solid steel, made of low-alloy, high-tensile steel.

The cars are equipped with Type-E high-tensile cast-steel couplers, bottom-operated by rotary coupler release rigging. The cars are also equipped with coupler-centering device, Type-AB brakes and vertical-wheel, high-power hand brakes. All hand brakes are provided with oil holes for oiling the internal working parts. Lightweight, high-tensile cast-steel vertical coupler yokes are used with certified draft gears. All small forgings are manufactured in the railroad company shops.

The car interiors are completely lined with wood. The floor is 1¾ in. thick, with Philippine mahogany used in the doorways and Douglas fir in balance of the car. The sides and ends are lined with 2⅝-in. Douglas fir. The ceiling is lined with ⅝-in. Douglas fir plywood panels which are secured to the roof at the roof joints with metal strips. Plywood strips cover all roof joints and side plates, so that the only exposed metal surfaces on the inside of the car are the doors.

A steam-heating line and a signal line are applied underneath the car. The steam line has metallic connectors and end valves. The body of the car is painted gray, with bright red striping top and bottom and with lettering in yellow, except the "Challenger," which is bright red. Underframe trucks and roofs are painted freight-car red.

* * *

N. A. M. Resolution on Transportation

The National Association of Manufacturers, meeting in New York last week, adopted the following resolution respecting transportation:

"The Congress of American Industry, composed of manufacturers from all sections of the United States, producing manufactured articles of every kind in shops from the smallest to the largest but grouped broadly as 'shippers,' notes the continued interest in transportation matters displayed by Congress and many interested groups. Progress in the correction of many of the transportation difficulties has unfortunately been slow. We believe more rapid and more constructive progress could be made by greater co-operation between the transportation groups involved and by taking the results of this co-operative effort to the proper committees of Congress whenever their assistance is required.

"We believe that one of the most important elements in the transportation situation, i. e., the shipper who pays the bill, has been overlooked.

"Transportation is an important factor in the prosperity of the shipper and no settlement of the transportation problem will succeed which does not take into full consideration the shippers' requirements of cheap, efficient and uninterrupted transportation of the required volume.

"The shipper insists that it is his right to use the form of transportation best suited to his needs with the least regulation required to protect the public interest and to secure the orderly conduct of affairs.

"The transportation system of this country is with few exceptions privately owned and operated. Alterations of the transportation policy or additions thereto should be on a basis that is in harmony with the principle of private enterprise and with a fair return on the capital invested."

NEWS

Far Apart on Revamping R. I.

Security groups don't see alike,
R. I. A. L. wants a divorce
to hitch up with L. & A.

It became evident when the Interstate Commerce Commission concluded hearing oral argument on Examiner Conway's proposed plan of reorganization for the Chicago, Rock Island & Pacific on December 8 after a two-day session that the area of disagreement between the many parties is so broad that to reconcile the differences would virtually mean the writing of a new plan. None of the bondholder or creditor groups nor even the debtor corporation, itself, agreed with the examiner, and some interests went so far as to threaten extended litigation if they did not receive better treatment at the hands of the commission when it drafts its final plan. Practically every attorney appearing protested that the examiner did not do justice to the corporate structure of the Rock Island when he pared the total capitalization from the old figure of \$460,000,000 to a new low of \$306,000,000.

Marcus L. Bell, general counsel for the road and appearing as counsel for the stockholders of the debtor corporation, began his hour-and-a-half argument by asserting that section 77 of the Bankruptcy Act gives the commission no power to scale down the total capitalization when there is real value in the property which would support a higher figure. It was Mr. Bell's view that the commission's power is limited to prescribing fixed charges and to finding that the total capitalization is compatible with the public interest.

Assailing the examiner's proposal, Mr. Bell urged the commission to accept the debtor's plan which would have permitted the present preferred and common stockholders to share in the securities of the new corporation. Mr. Bell pointed out to the commission that it had authorized all the road's securities since 1920 and that now the examiner proposed to wipe out all the common and preferred stock. He called the examiner's plan "destructive of railroad credit" and urged the commission to accept the principles of the debtor's plan. It was his belief that the real value of the road is much greater than the \$306,000,000 set by the examiner and that such a thesis could be proved in court if the debtor is forced to contest the legality of the commission's decision.

Wilkie Bushby, appearing as counsel for the first and refunding committee, informed

the commission that except for the amount of the total capitalization, his clients accepted the examiner's plan. He further said that his group believed that their proposed capitalization of \$381,000,000 was conservative, as was their figure of \$55,000,000 for the amount of fixed interest obligations. In Mr. Bushby's opinion, Examiner Conway's plan does not have enough securities to take care of all the bondholders, let alone providing anything for any of the equity holders. He said that the examiner's plan failed by some \$65,000,000 to provide enough new securities to make a fair allocation to the present creditors.

It was at this point that he predicted the low amount of capitalization of the examiner's plan would doom it to failure. Mr. Bushby accused some of the other parties of using what he termed a "trial and error method" for allocating new securities. According to this procedure, "you start out with a definite fixed conclusion in mind that you desire to reach, and if you fail, you try again until you reach it, regardless of how much injustice you may do to the formula you are using." In Mr. Bushby's opinion, no one has done a comprehensive job of allocating new securities in this case.

E. W. Bourne, representing the general mortgage committee, stated it to be the position of his committee that they should have new securities up to the value of their claims if the value exists in the property. He also objected to the treatment given his group.

Thomas Epstein, appearing as counsel for the Marine Midland Trust Company of New York City in its capacity as trustee of the Kansas City Short Line bonds, criticized the treatment accorded the holders of these bonds in the proposed report.

Despite the fact that they have no lien on the property, Frederick W. Wood, counsel for the Chase National Bank of New York City as trustee of the convertible bonds, claimed that these bonds are secured by free assets totaling \$17,000,000, as contrasted with the examiner's finding that the free unattached assets amounted to some \$14,000,000. He urged the commission to give better consideration to his clients.

Another counsel joining the chorus for more beneficent treatment was E. C. Bailly, counsel for the Burlington, Cedar Rapids & Northern bondholders committee. He demanded the allocation of more new securities for his bondholders.

E. L. Williams, representing bondholders of the Choctaw & Memphis and the Choctaw, Oklahoma & Gulf, told the commis-

(Continued on page 938)

"Consumers" Put RRs on the Pan

Outfit alleged in Dies report as
"Trojan horse" for Reds
roots for govt. ownership

Railroad management gets a thorough beating and government ownership a pious and devoted O. K. in a series of four articles published in the July to October (incl.) monthly reports of the Consumers Union of the United States, an organization, which, according to a report presented to the Dies committee and recently made public, is alleged to serve as a "transmission belt" for the Communists in their so-called "Trojan horse" technique of sowing seeds of discontent among the country's population.

The series of anti-private-ownership articles is also being reprinted in current issues of the "Railroad Trainman," official organ of the Brotherhood of Railroad Trainmen. Signed by Moritz Howard, a pseudonym used by two writers "whose present connections with the railroad industry make the use of their names inadvisable," the articles have originally appeared in a publication which purports to weigh the merits and defects of industry's products for the protection of its "consumer-subscribers." Interspersed with these evaluations are articles on labor and politics, the drift of which is strongly to the left. (A resolution providing that all articles relating to politics, labor and similar subjects be omitted from the Union's publications and that all staff members except those occupied with technical services be dropped was voted down at a membership meeting of the organization held in June).

The articles by the mysterious Mr. Moritz on the railroad situation follow a familiar line of attack and closely parallel a booklet recently published by the Labor Research Association, a left-wing writers' group, which was summarized in the *Railway Age* of September 16. Installment No. 1 is a comparatively straightforward commentary on passenger fares which discusses the decline in rail travel and recent experiments in low rates and urges a straight cent-a-mile fare. The second section, titled "The Public Be Damned," attacks railroad equipment and facilities as obsolete and censures executives for failing to keep in step with other transportation agencies. The subject-matter now grows "warmer"; bankers are found to be one of the causes of the trouble. It is explained that since equip-

ment trust issues now carry such a low rate of interest, "Wall Street" is no longer interested. . . . "and the railroads now buy passenger equipment only in small doses." Installment buying of equipment direct from manufacturers also gets a dose of buckshot. In presenting figures to indicate the paucity of modern passenger equipment installed, the article reports that the roads have rebuilt only 34 passenger cars during the last five years, basing its figures on carriers' reports to the I. C. C., and explaining that if more have in fact been rebuilt, "they have been improperly accounted for." Another set of facts presented as evidence of bad management is that "passenger locomotives other than steam are a negligible percentage of the total . . . only 26 internal combustion locomotives and 290 electric locomotives were available for passenger service at the beginning of 1938."

Whereas these first two installments are relatively factual and make no attack on private enterprise, even offering suggestions on the ground that they would increase traffic and earnings, No. 3 gets down to the real business at hand—which plainly is to induce the belief that private ownership and management have failed beyond repair. Here it is contended that regulation has not met the test and that no amount of "tinkering" will bring success. "For the essence of regulation is that it can forbid but can seldom command."

The real message for "consumers" comes in the final installment "How to Run the Railroads." Since "nobody 'owns' a railroad," inasmuch as management rarely has a personal stake in profits and railroad control is irresponsible to "absentee ownership," "the time has come to return the railroads to responsible management—to a management responsible to the public for whose service the railroads were built and maintained." The article suggests (as did the Labor Research pamphlet mentioned above) that a government-owned corporation take over the railroads to be controlled by five public trustees appointed by the President for 10-year terms at the salaries of Supreme Court justices, aided by an advisory board representing "industry, labor, agriculture, consumers, etc." Present owners would be reimbursed for their holdings at approximately the *current market value* of their holdings, on the principle that "the market values securities on the basis of earning power."

It is asserted that government ownership would (1) eliminate abuses by bankers, lawyers, the Pullman Company, refrigerator car companies, lobbies, etc.; (2) increase railroad purchases and furnish "an ideal object" of justifiable federal spending; (3) remedy the evils which private ownership has foisted on the South, "the nation's number one economic problem"; (4) solve the problem of the weaker roads; and (5) "rationalize" the industry. With respect to the latter, it is to be noted that installment No. 3, in discussing remedies proposed by present management, rejects consolidation and co-ordination as causing suffering to labor and the public. But installment No. 4 upholds this same "rationalization" under government control as eliminating circuitry, excessive transfer of lading, cross-hauling, multiple terminals,

Kay Kyser Salutes American Railroads

Kay Kyser and his "College of Musical Knowledge" will fete the railroads of America musically in a program to be broadcast over the NBC Red network Wednesday, December 27, at 10 p. m. (e. s. t.). The orchestra and accompanying vocalists will present a program specializing in songs presenting the railroad atmosphere such as "I've Been Working on the Railroad" and "Wreck of the Old 97." The quiz section of the broadcast will embrace questions on railroading and its relation to the musical life of the country.

etc. It defends its stand by contending that the latter set-up would protect labor and pass savings on to the consumer. In this connection, it is urged that the public ownership act should prescribe "a minimum level of railroad employment."

The Consumers Union was cited in a report dealing with Communists in consumer organizations submitted by J. B. Matthews, research director of the so-called Dies sub-committee of the House Special Committee to Investigate Un-American Activities and made public December 10. Therein the allegation of its "transmission belt" relationship to the Communist "Trojan horse" strategy was made. An official of the union has denied the Matthews charges, asserting that the organization is non-partisan and non-political.

Hearing Set on Eastern Roads' 2½-Cent Fare

Extension for 60 days instead of the nine months requested, and assignment of the case for hearing on January 4, 1940, was the Interstate Commerce Commission's prompt response to the application of Eastern railroads for authority to carry out their previously-announced proposal to continue their 2.5-cents-per-mile basic coach fare in effect beyond the present January 24, 1940 expiration date. The petition, filed on December 5, asked for an extension until October 31, 1940; but the commission's order, entered December 11, authorizes only a 60-day extension until March 24, 1940. Meanwhile, the order assigned Commissioner Porter and Examiner Koch to conduct the above-mentioned January 4 hearing at Washington, D. C.

"Eastern carriers," the application for the extension had said, "do not contend that the present fare structure is the best one which could be devised, but in their judgment the present structure has not been in effect for a sufficient length of time to enable them, or the commission, to say with confidence what the basic coach fare for one-way transportation should be." It is impossible, the petition goes on, to reach a definite conclusion because of the special rates in effect this year for travel to the New York and San Francisco fairs. It continues to promise that the principal Eastern roads will submit to the commission data giving a complete breakdown by 50-mile blocks of the passenger business

handled in certain months under the various classes of fares now in effect, both one-way and round-trip.

"The carrying out of this experiment," the petition adds, "would be jeopardized, if not rendered impossible, were the carriers required to restore a basic fare of two cents per mile one way in coaches."

Annual Dinner Chicago Traffic Club

The annual dinner of the Traffic Club of Chicago will be held on January 18.

Reported Creditable Compensation Under Pension Act

Total compensation credited to employees covered by the Railroad Retirement Act in the first six months of 1939 amounted to \$1,012,500,772. This excludes compensation greater than \$300 in any one month. Additional compensation credited in this period but applicable principally to earlier years of operation totaled \$10,338,372.

Pension Tax Collections in November

Collections from carriers and their employees under the Carriers Taxing Act in November amounted to \$4,176,036 bringing the collections for the first five months of the fiscal year to \$34,230,786. From the beginning of operation to the end of November, tax collections totaled \$293,528,226 of which \$109,256,539 was collected in the fiscal year 1938-39.

Santa Fe Speeds Up Oklahoma and Texas Freight Service

The Atchison, Topeka & Santa Fe, on December 11, speeded up its freight service between Chicago and points in Oklahoma and Texas, to provide 24 hours earlier delivery. Under the new schedule a new fast train will leave Chicago at 6 P. M. daily and will arrive in Oklahoma City at 10 P. M. the next day, at Fort Worth and Dallas, the second morning, and at Houston, Beaumont and Galveston the third morning.

Federal Transportation Association

W. H. Forbes of the General Accounting Office was elected president of the Federal Transportation Association at the annual meeting held in Washington, D. C., on December 12. He succeeds William E. Hayghe, chief of the Federal Traffic Section, Procurement Division of the Treasury. Membership in the Association, which calls itself "A Society of Transportation Specialists," is composed in large part of federal government employees concerned with transportation matters.

Representative Mapes Dies

Representative Carl E. Mapes, Republican of Michigan, ranking minority member of the House committee on interstate and foreign commerce, died suddenly on December 12 at New Orleans, La., where he had been participating in a hearing on an oil regulation bill. Mr. Mapes, who was 64 years old, had been a member of the House since 1913.

Although he was not a member of the conference committee on S. 2009, Mr. Mapes was a consistent supporter of Chair-

man Lea in the latter's effort to get the House version of this general transportation bill through the lower branch during the latter days of the last regular session. Mr. Lea's plea for the rule providing for consideration of the measure was supported by Mr. Mapes before the rules committee of which he was also ranking minority member. Also, he took part in the debate in the House, denying that S. 2009 was a "railroad bill," and calling it a measure framed "primarily for the purpose of furnishing the country with an adequate, efficient and cheap transportation system." Previously, at the extended House committee hearings on the bill, Mr. Mapes had been a regular attendant, and had taken an active part in questioning representatives of various interested parties.

Cincinnati Commercial Zone

Examiner Allan F. Borroughs has defined in a proposed report the area which he recommends that the Interstate Commerce Commission find to be the commercial zone of Cincinnati, Ohio, wherein motor vehicle operations will be exempt from the Motor Carrier Act's regulatory provisions, except those relative to qualifications and maximum hours of service of employees and safety of operation or standards of equipment. The proposed report is in Ex Parte No. MC-30.

Lawford H. Fry Now Chairman A. S. M. E. Railroad Division

Following the annual meeting of the American Society of Mechanical Engineers held at the Bellevue-Stratford Hotel, Philadelphia, Pa., December 4-8, Lawford H. Fry, railway engineer, Edgewater Steel Company, succeeded to the chairmanship of the Railroad Division of the society. C. T. Ripley, chief engineer, Technical Board, Wrought Steel Wheel Industry, the retiring chairman, becomes a member of the Standing Committee on Professional Divisions of the society.

Police Hold Annual Dinner

National, city and county law enforcement officers, railroad officers, mayors and chiefs of police of nearby cities and towns, and sheriffs of surrounding counties, were the guests at the nineteenth annual banquet of the Chicago Railway Special Agents and Police Association at Chicago on December 7. Samuel O. Dunn, chairman of the board of the Simmons-Boardman Publishing Corporation and editor of the *Railway Age*; Judge Joseph Graber of the Criminal Court at Chicago; and W. I. Spitler, chief special agent of the Chicago, Indianapolis & Louisville, were the principal speakers.

Williamson Gives Historical Talk at N. Y. Museum Exhibit

Some 600 invited guests, including a score or so of important railroad officers, heard a talk on the history of railroading by President F. E. Williamson of the New York Central at the official opening of the "Railroads to New York" exhibit at the Museum of the City of New York on December 12, announced in last week's issue. Mr. Williamson, who illustrated his talk with slides showing early prints and photo-

graphs, collaborated with Harry T. Peters, authority on early American lithographs, in presenting the story.

Comparisons of Revenues Per Ton-Mile Don't Mean Much

International comparisons of railway freight revenues per ton-mile "are not significant unless due consideration is given to the kind of service rendered by railways and to dissimilarity in economic and other conditions affecting railway freight traffic and rates actually charged," according to a survey of various studies which has been prepared by Associate Economist G. M. Saharov of the Interstate Commerce Commission's Bureau of Statistics. The survey arrives at the above conclusion after a highlight review of findings of several authorities who have studied the subject in the past.

"In the final analysis," Mr. Saharov says in conclusion, "the dissimilarity in economic and other conditions affecting railway freight traffic and rates (actually charged) accounts, to a large extent, for differences in ton-mile revenues of railway systems in countries compared. Also the relative adjustment of those freight rates to the economic and other conditions in countries is no doubt of greater significance and importance than the actual rates. . . ."

Iron Age Publisher Dies at 68

Fritz John Frank, president of The Iron Age Publishing Company, died on December 8 at the Northern Westchester Hospital, Mt. Kisco, N. Y., after a short illness at the age of 68 years. Mr. Frank



Fritz John Frank

devoted his lifetime to the publishing business, the last 30 years of which were with "The Iron Age," of which he was president and director at the time of his death. He was also active in association work for the upbuilding of the publishing industry and its service and was an outstanding figure in the Associated Business Papers serving as president in 1923-24.

He was born at Emporium, Pa., and was graduated from Rollins College, Winter Park, Fla., with the degree of bachelor of arts in 1896. Shortly after this he commenced his publishing career by joining the

"Colliery Engineer" and later "Mines and Minerals" as advertising manager. In 1906, he joined the "Mining and Scientific Press" as Chicago representative, continuing with that publication until 1910, when he went with "The Iron Age" as advertising manager in the New York territory. In 1911, Mr. Frank was made secretary of the David Williams Publishing Company, the predecessor of The Iron Age Publishing Company, and in 1918 was elected vice-president. One year later, he became president. He also was a director of a number of other organizations.

Another I. C. C. Probe of Competitive Rates on Petroleum

Another minimum rate case was launched last week when the Interstate Commerce Commission instituted upon its own motion an investigation into the rates and practices of railroads and common and contract motor carriers with respect to the transportation of petroleum products between points in Kansas, Oklahoma, Arkansas and Missouri. The proceeding, docketed as No. 28380, was instituted "with a view to prescribing just and reasonable rates, charges, regulations and practices . . . including minimum rates and charges and the relation, if any there should be, of rates and charges as between the said respective forms of transportation. . . ." The order set no date for the hearings.

Boettcher to Return \$761,000 to D. & R. G. W.

Claude K. Boettcher, a Denver (Col.) financier, has agreed to return \$761,000 to the Denver & Rio Grande Western, the amount which he received from the road in 1930 for 3,651 shares of stock of the Denver & Salt Lake. This re-purchase is stipulated in an unusual contract between Mr. Boettcher and the trustees for the bankrupt D. & R. G. W., approved on December 4 by the United States district court at Denver. Since the court is directed under Section 77 to investigate past transactions of a railroad under the protection of the federal bankruptcy law, several years ago it appointed Wilbur Newton, brother of a partner of Mr. Boettcher, to investigate the Rio Grande. As a result of his findings, Mr. Boettcher has agreed to re-purchase the Moffat road stock at the price he received for it in 1930. The R. F. C. has approved the move.

I. C. Adds Second Section to Fast Package Train

The Illinois Central has added a second section to its fast I. C. 1 freight train, the MS-1, to handle the increased traffic to the south which this train has developed. This service was established on October 1, 1936, with an estimated 25-car train, but traffic has increased until on December 7, 1939, for illustration, the MS-1 carried 44 cars, and the second section 37. During the first ten months of 1939, gross revenues from the operation of this freight train totaled \$1,600,000, as compared with \$1,350,000 in the first ten months of 1938, while freight handled totaled 82,563 tons in the first ten months of 1939, compared

with 67,482 tons in the corresponding period of 1938, a gain of 22.34 per cent. The train leaves Chicago daily at 7:30 p. m., covers the 527 miles between Chicago and Memphis in 13 hr. and saves 24 hr. between Chicago and New Orleans.

Charles F. Carter Dies at 76

Charles Frederick Carter, believed to be one of the country's most prolific writers of railroad stories and articles, died on December 10 at his home in New York at the age of 76.

Mr. Carter's interest in railroading began in 1881 when he obtained his first railroad job as an engine wiper on the Chicago, St. Paul, Minneapolis & Omaha. In 1889, he entered journalism as a reporter and later filled more advanced editorial positions on various papers in Denver, New York and Brooklyn. In 1906, Mr. Carter joined the staff of "Railroadman's Magazine." From 1923 to 1932 he was special representative in the New York Central's department of public relations.

He was author of "When Railroads Were New," published originally in 1909, and in a revised centenary edition in 1926; "Big Railroading," published in 1919, and numerous magazine and encyclopedia articles on industrial and economic subjects.

Railroad Engineers Honored by A. S. M. E.

At the annual dinner and "honors night" of the American Society of Mechanical Engineers held during the annual meeting of the society at the Hotel Bellevue-Stratford, Philadelphia, Pa., December 4 to 8, honorary membership in the society was conferred on Henry Hague Vaughn. Mr. Vaughn is widely known for his influence on the design of cars and locomotives and the organization of the shops on the Canadian Pacific during his service as assistant to vice-president in charge of the mechanical department during the nine years prior to 1915. Since leaving the railroad in 1915, Mr. Vaughn has been engaged in industry and as a consulting engineer in Canada.

Dr. Rupen Eksergian of the Edward G. Budd Manufacturing Company was the recipient of the Worcester Reed Warner Medal awarded for his contributions to permanent engineering literature. Dr. Eksergian has been a prolific writer on various phases of locomotive and car design and on applied mechanics subjects.

Wider Use of Radiotelephony is Recommended

Federal Communications Commissioner Thad H. Brown has submitted to that commission a report recommending legislation and other regulation to insure better safeguards in the matter of radio communication facilities of shipping on the Great Lakes and coastal waters of the United States. For ships on the Great Lakes, a uniform system of radiotelephony is proposed which would be established by formal agreement between the United States and Canada, supplemented by legislation of the respective countries, to take effect for the 1942 navigation season. For vessels using the bays, sounds, and other seaboard waters

of the United States, an optional use of radiotelephony or radiotelegraphy is recommended, effective January 1, 1942.

Railroads conducting marine operations in these waters have been interested in the investigation, which was conducted by Commissioner Brown under authority of an order from the Congress dated May 20, 1937.

Occupations of Unemployment Insurance Beneficiaries

Maintenance of equipment and maintenance of way employees constituted the majority of the claimants for whom one or more unemployment insurance payments had been certified by the Railroad Retirement Board by November 10.

As of that date there were 75,675 beneficiaries. The last occupation in which 71,923 of them were employed was readily identified from statements made on the claim form. Of this total 26,958, or 37.5 per cent, last worked in the maintenance of equipment department, and 17,517, or 24.4 per cent, in maintenance of way and structures. Train, engine and yard employees accounted for 17.8 per cent of the total and employees generally classified with the station forces constituted 13.9 per cent.

The figures above apply to the country as a whole. The proportion of beneficiaries in different occupations, however, varied somewhat in the different regions. Clerical and general office employees, for example, were a larger proportion of total beneficiaries in the New York region than in any other. Shop and store employees were more important among the beneficiaries in the Boston, Mass., Cleveland, Ohio, Chicago, Ill., Kansas City, Mo., and Denver, Colo., regions than in other parts of the country. A larger proportion of beneficiaries was found among employees in maintenance of way and structures in the Minneapolis, Minn., Seattle, Wash., and San Francisco, Calif., regions than in others. In the Southern territory included in the Richmond, Va., Atlanta, Ga., and Dallas, Tex., regions, the proportion of beneficiaries classified in the train, engine and yard service exceeds the average for the country.

Equipment Depreciation Orders

Equipment depreciation rates for six railroads, including the Southern Pacific and the Chicago Great Western, are prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in No. 15,100, Depreciation Charges of Steam Railroad Companies. The composite percentages, which are not prescribed rates, range from 2.48 per cent for the Lorain & Southern to 3.13 per cent for the C. G. W., exclusive of equipment leased from the General American Car Corporation.

The Southern Pacific's composite percentage of 3.05 is derived from a variety of prescribed rates as follows: Steam locomotives, 2.9 per cent; other locomotives, 5.74 per cent; freight-train cars, 3.22 per cent; "City of San Francisco" type passenger equipment, 6.4 per cent; "Daylight" type passenger equipment, 3.84 per

cent; all other passenger equipment, 2.58 per cent; floating equipment of Southern Pacific Steamship Lines, 2.83 per cent; all other S. P. floating equipment, 3.63 per cent; work equipment of S. P. Steamship Lines, 3.05 per cent; all other work equipment, 3.38 per cent; miscellaneous equipment of S. P. Steamship Lines, 10.53 per cent; all other miscellaneous equipment, 9.34 per cent.

The above-mentioned composite percentage of 3.13 for the C. G. W. is derived from prescribed rates as follows: Steam locomotives—owned, 3.03 per cent, leased from the Mason City & Fort Dodge, 2.35 per cent, leased from the St. Paul Bridge & Terminal, 3.2 per cent; other locomotives—owned, 4 per cent; freight-train cars—owned, 3.02 per cent, leased from M. C. & F. D., 1.93 per cent, leased from St. P. B. & T., 3.21 per cent, leased from General American Car Corporation, 3.6 per cent; passenger-train cars—owned, 3.33 per cent, leased from M. C. & F. D., 2.27 per cent; work equipment—owned, 4.37 per cent, leased from M. C. & F. D., 2.28 per cent, leased from St. P. B. & T., 2.29 per cent; miscellaneous equipment—owned, 19.81 per cent.

Katy Inaugurates Truck Service

The Missouri-Kansas-Texas on December 4 established freight truck service to supplement its rail service in that section of Kansas served by the Katy Lines. The initial operation, involving four routes operating out of Parsons and one between Emporia and Junction City, will serve 51 communities.

In entering the truck field, the Katy proposes three distinct types of service: (1) a co-ordinated rail-truck service to be auxiliary to existing all-rail service by moving merchandise cars to certain concentration or set-out points and then making distribution by truck; (2) an all-truck service on short hauls between stations, where feasible and economical, as a substitute for rail service; and (3) an all-truck service restricted to points on the railroad, but in addition to rather than as a substitute for rail service. The railroad proposes to parallel its main and branch rail lines with truck routes, so far as existing highways permit. It does not propose to service by motor vehicle any point which it does not now serve by rail.

For the physical performance of the trucking operation, the Katy has entered into a contract with the Columbia Terminals Company of St. Louis, Mo. Five trucks are used, four being operated between Parsons and the several destinations indicated in the schedules and one between Emporia and Junction City.

Can't Have R. R. Tracks All Over City—Why Interurban Buses?

"We can't have railroad tracks all over the city. Then why permit those unwieldy buses to tie up traffic." That, at least, is the feeling of one officer of the world's largest city,—S. M. Isaacs, president of the Borough of Manhattan, New York city. He is the head of a committee appointed by Mayor F. H. LaGuardia to outline heavy traffic zones in New York from which all interstate or interurban buses

would be barred, which has recommended that the entire southern tip of Manhattan island and the midtown area between 14th and 110th streets (except for fringes along the rivers) would be declared no-bus zones. The committee's plan proposes that union terminals be established near the New York entrance of the Holland and Lincoln tunnels and the George Washington bridge, principal bus arteries to New Jersey communities and the west, and that present routes and terminals in the congested zones be abandoned.

Upon being apprised of written protests by bus patrons that the change would inconvenience them by forcing a transfer to urban buses or rapid transit lines to reach their destinations, Mr. Isaacs commented: "Of course, it is an inconvenience to some commuters, but how about the man who commutes by train from New Rochelle?"

Sacramento Northern Would Cease Carrying Passengers

The Sacramento Northern, an electric railroad engaged in both passenger and freight business and operating between San Francisco, Cal., and Chico by way of Sacramento, with branch lines to various points in Northern California, has filed an application with the California Railroad Commission asking for permission to discontinue interurban passenger train service between all points on its lines, other than between San Francisco and Pittsburg, and intermediate points. The petition set forth that "during the period from 1920 to 1938 inclusive, the annual revenue derived by the Sacramento Northern from the transportation of passengers decreased from \$1,699,902 to \$277,651, while the number of passengers decreased from approximately 2,220,000 to 623,000. During each year since 1930, revenues received from the transportation of passengers, baggage, mail and express have failed to meet the out-of-pocket cost of operating passenger trains. Notwithstanding the temporary increase in passenger travel incident to the exposition at San Francisco, the revenue earned during the nine months ended September 30, 1939, by the trains which the company seeks to discontinue, failed to meet the out-of-pocket costs of operation, plus taxes and depreciation by approximately \$93,170. If the company is permitted to discontinue the passenger trains referred to in the application, substantial annual savings in operating and other expenses will result, and to that extent relieve other traffic transported by the applicant of an unnecessary and undue burden."

Regulations for Handling Auto Cars

W. C. Kendall, chairman of the Association of American Railroads' Car Service Division has issued a circular promulgating regulations for the handling of automobile cars equipped with loaders and closed and open top cars equipped with permanent fixtures or racks for handling automobile parts. With respect to the former, the regulations require that when the cars are released from lading they be promptly routed home and not used for any loading; that on such return movement the cars be sealed and accompanied by empty slip way-

bill showing as the full home route the reverse of the previous loaded movement.

The regulations will not apply to cars that can be identified as having been delivered off line by the owner loaded with commodities other than motor vehicles, to cars so loaded by permission of the owner, or to cars loaded with automobiles under the passenger ticket plan.

With respect to the cars equipped for handling automobile parts, the regulations require that such cars be returned promptly to the assigned loading point, and that the empties be returned via the service route under the above-mentioned empty slip waybill arrangement.

Another circular recently issued by Mr. Kendall offers the railroads copies of the Official Railway Equipment Register's list of 50-ft. box cars with the thought that such information "will contribute to a more effective and proper handling of these cars." Previously, the circular had pointed out that the widespread and heavy demands for various types of 50-ft. box cars in conjunction with the "somewhat limited" ownership "necessitates particular attention to the proper handling." The copies of the Equipment Register list, Mr. Kendall added, were prepared to assist the Car Service Division's field force in currently checking the handling of the cars involved.

U. S. Far Excels Rest of World in High Train Speeds

The passenger schedules of American railroads now show a daily mileage of 54,956 run at 60 m. p. h. or above, an increase of 16.7 per cent over the mile-a-minute mileage of a year ago, according to a summary being circulated by the A. A. R. from a compilation made by "Railroad Magazine." During the same period, the number of separate runs operating daily at 60 or more m. p. h. increased from 864 to 997. If the mile-a-minute performances of weekly and semi-weekly transcontinental and Florida streamliners are included, the figures reach 1,070 runs with an aggregate mileage of 65,034, or a 15.5 per cent rise over last year.

This places the United States far in the lead in the amount of high-speed railroad mileage. In fact, one large American railway system, with its 14,382 miles of daily runs scheduled at 60 miles and more per hour, has more mile-a-minute mileage than the grand total of any foreign country.

According to the survey, American railroads now have 85 runs booked at 70 m. p. h. and more which cover a total distance of 8,068 miles, all but 2,156 of which are scheduled daily. A year ago, there were 66 such fast runs, totaling 5,899 miles, of which 3,743 were completed each day.

The past year's increase in high-speed mileage was not due to the revision of schedules by any one system, the survey discloses. Instead, the acceleration of passenger train movements by many railroads throughout the country was responsible. No other period in the history of American railroading has seen such striking gains in the speeding up of trains as has that of recent years. In 1928, except for one or two short runs in New Jersey, there was not a single train in the United States scheduled from start to stop at an average

of more than 60 miles an hour. By 1930, the total was approximately 1,100 miles. In nine years, then, this mileage has increased almost 60 times.

Freight Car Loading

Loading of revenue freight for the week ended December 9 totaled 687,265 cars, the Association of American Railroads announced on December 14. This was a decrease of 1,623 cars, or 2 per cent, below the preceding week, but an increase of 68,301 cars, or 11 per cent, above corresponding week in 1938 and an increase of 67,999 cars, or 11 per cent, above the same week in 1937.

As reported in last week's issue, the loadings for the previous week ended December 2, totaled 688,888 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue Freight Car Loadings			
For Week Ended Saturday, December 2			
Districts	1939	1938	1937
Eastern	153,412	141,660	132,031
Allegheny	158,524	119,793	109,383
Pocahontas	48,918	46,230	40,402
Southern	96,331	97,762	96,870
Northwestern ..	76,916	80,663	74,926
Central Western	105,737	110,327	109,353
Southwestern ..	49,050	52,099	57,360
Total Western Districts	231,703	243,089	241,639
Total All Roads	688,888	648,534	620,325
Commodities			
Grain and grain products	38,222	35,769	37,413
Live stock	13,554	16,681	15,154
Coal	135,710	143,151	126,716
Coke	11,749	7,927	6,152
Forest products	34,764	28,728	27,861
Ore	11,640	9,307	10,560
Merchandise l.c.l.	149,510	152,737	154,962
Miscellaneous ..	293,739	254,234	241,507
December 2	688,888	648,534	620,325
November 25	676,516	561,658	555,762
November 18	771,404	657,066	644,927
November 11	785,961	636,446	685,926
November 4	805,862	672,967	728,765

Cumulative Total, 48 Weeks ... 31,529,241 28,158,458 35,538,188

In Canada. — Carloadings for the week ended December 2 totaled 55,115, as compared with 59,761 in the previous week, and 47,862 in the comparable week last year, according to the summary issued by the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Dec. 2, 1939	55,115	26,689
Nov. 25, 1939	59,761	25,009
Nov. 18, 1939	58,370	26,373
Dec. 3, 1938	47,862	22,879
Cumulative Totals for Canada:		
Dec. 2, 1939	2,367,454	1,100,324
Dec. 3, 1938	2,277,776	989,361
Dec. 4, 1937	2,457,415	1,265,061

P. R. R. Bullish on New Haven's Recovery From Highway Competition

Protesting against the wiping out of common and preferred stocks of the New York, New Haven & Hartford, recommended in I. C. C. Examiner Wilkinson's proposed report and plan of reorganization for the road, the Pennsylvania (the P. R. R. owns approximately 20 per cent and Pennroad Corporation 9 per cent of outstanding New Haven common) has filed exceptions thereto based on the contention, among others, that the only reason for the road's temporary difficulties, beside the business depression, is bus and truck competition which, it is believed, will be greatly

reduced in the future. The Old Colony, a leased road of the New Haven, has also filed exception to the examiner's report protesting exclusion of the O. C. from the reorganization and proposing that the I. C. C. consider the possibility of sale of the present O. C. line between Fitchburg, Mass., and Lowell and Mansfield, to the Boston & Maine as a step toward strengthening its financial position.

The Pennsylvania's brief refers to the testimony of Professor C. B. Breed, of the Massachusetts Institute of Technology, to the effect that highway transport is subsidized to the extent of \$40,000,000 yearly in the three southern New England states through which the New Haven operates, a sum three times the interest on the New Haven's present debt and seven times the annual fixed charges under the proposed reorganization. "The examiner, however," contends the brief, "passes over this major fact as if it were a mere incident, as he does also the fact that this discriminatory situation is in process of being remedied. The 17,774 men and women who invested \$190,000,000 of their earnings in the stock of this great railroad confidently believe that it will not be long before the public, acting through the governments, will recognize the injustice of the present unfair highway competition and take effective steps to remedy it. When this happens, as it surely will, and when the country recovers, as it surely will, from the depression, there is no reason why the New Haven Railroad should not enjoy renewed prosperity. When this day comes, however, and when the New Haven is again earning a fair return on the property bought with the money which the present stockholders invested in its stock, it will afford them but cold comfort if, by a stroke of the pen, they have been wiped off the railroad's books and forever precluded from any chance to recoup their savings."

The brief goes on to cite Professor Breed's estimate that the New Haven stands to recover more than \$9,000,000 annually of the \$23,000,000 gross freight revenues now earned by trucks in the three states, based on significant developments in railroad services and rates, and the trend of higher costs in the New England highway field. It contends also that the report fails to take notice of the recent great increase in the road's operating efficiency, quoting testimony of Dr. J. H. Parmelee, director, Bureau of Railway Economics, that the New Haven has made a better relative showing since 1929 in three out of the five major indices of operating efficiency than Class I carriers as a whole. Comparing the first four months of 1939 with those of 1938, the statement shows that the New Haven's net railway operating income increased \$2,807,000 as against an income of \$3,022,000 in total operating revenues. Thus for every dollar of increase in gross, net showed an increase of 93 cents.

The Pennsylvania brief also contends that estimated combined savings of \$5,500,000 through consolidation of the New Haven with the Boston & Maine, of which the share of the former would be \$3,175,000 plus its interest through the Boston Holding Company, are relevant to the problem

as affecting the prospective earning power of the debtor company.

The Old Colony exceptions to the report protest vigorously against its failure to include it in the New Haven reorganization and ask the I. C. C. to consider possible gains to the Old Colony from sale of the Fitchburg-Lowell-Mansfield line to the B. & M., a move which, it declares, should prove attractive to the latter as giving it access to the Providence (R. I.) area. The brief considers also the possibility of selling the O. C.'s one-half interest in the Union Freight (operating in Boston) to the B. & M. The proceeds of both these sales would be distributed pro rata to O. C. bondholders par for par in lieu of securities of the reorganized New Haven. B. & M. officers have made public no comments on either the Pennsylvania statement or the Old Colony proposal.

September Bus Revenues 6.7 Per Cent Above Last Year

Class I motor carriers of passengers reported September revenues of \$11,192,355, as compared with \$10,485,320 for September, 1938, an increase of 6.7 per cent, ac-

	September, 1939	September, 1938	September, 1939	September, 1938
New England Region	\$665,178	\$589,539	1,122,732	977,780
Middle Atlantic Region	2,009,762	1,763,958	3,129,329	2,679,892
Central Region	2,053,413	1,884,171	2,008,351	1,823,211
Southern Region	2,214,536	2,211,617	2,538,723	2,282,531
Northwestern Region	480,840	457,544	341,258	332,744
Mid-Western Region	936,769	902,719	574,349	548,567
Southwestern Region	1,261,486	1,237,004	1,256,236	1,196,061
Rocky Mountain Region	130,073	130,239	88,502	93,393
Pacific Region	1,440,298	1,308,529	1,406,687	1,220,612

cording to the monthly compilation prepared by the Interstate Commerce Commission's Bureau of Statistics from 148 monthly reports representing 149 bus operators. Passengers carried meanwhile increased 11.8 per cent, from 11,154,791 to 12,466,167. (The railroads in September made a better showing, comparatively, than the buses—their non-commutation passenger revenues being up about 9 per cent and their passengers carried up 18 per cent over last year.)

The breakdown of the bus revenue and traffic figures by regions is given in the accompanying table.

Bureau of Public Roads Makes Annual Report

More than 17,000 miles of highway were improved during the fiscal year ended June 30 in the program administered by the Bureau of Public Roads of the U. S. Department of Agriculture, according to the annual report of that Bureau which is now the Public Roads Administration of the Federal Works Agency. The report's list of the Bureau's 1938-39 accomplishments also included the elimination of 382 railroad-highway grade crossings, reconstruction of 86 obsolete grade-crossing structures, and protection of 438 crossings with signals and other devices.

"Outstanding features of the program," says the press release reviewing the report, "were the large amount of work done in widening, straightening, and otherwise modernizing important main highways, the excellent progress made in eliminating hazards at railroad grade crossings, and the

completion of nearly 3,000 miles of secondary roads."

The major part of the work was done in co-operation with the State highway departments, 13,482 miles being thus completed. This work included 9,786 miles on rural portions of the federal-aid system, 2,971 miles on the secondary or farm-to-market systems, and 725 miles in municipalities.

The Bureau also supervised road construction in National parks, National forests, reconstruction of flood damaged roads, and roads financed with funds allotted by the Public Works Administration and the Work Projects Administration. Work of this class aggregated 3,678 miles.

During the year the Bureau completed its study of the national highway situation, taking into account conditions on city streets, main rural highways and on secondary or farm-to-market roads. The study found that express routes passing directly through the centers of our largest cities "are urgently needed to relieve serious traffic congestion." Difficulties of acquisition and the high cost of necessary rights-of-way were cited as the most serious

obstacles hindering provision of the improvements. The report, which was sent to Congress with a message from the President on April 27, 1939, was recommended: The construction of a system of inter-regional highways complete with connections through and around cities; modernization of Federal-aid highway system; elimination of hazards at railroad grade crossings; improvement of secondary roads; and the creation of a Federal Land Authority to facilitate the acquirement of lands needed for public purposes.

The report was made in accordance with an act of Congress that directed the Bureau to investigate and report on the feasibility of constructing and operating on a toll basis three east-west and three north-south superhighways spanning the country. The Bureau's study found "that construction of such a system of toll roads would not be economically feasible, nor would it solve any considerable part of our highway problems."

Effective July 1, 1939, the Bureau was transferred from the Department of Agriculture to the newly created Federal Works Agency and its name changed to Public Roads Administration. Work during the fiscal year 1939 was performed under the direction of the Secretary of Agriculture.

"Obsolete" Railroads Cash in 18 Billions 1932-1938, Says Williams

While the railroads had tough going between 1932 and 1938, they nevertheless managed to contribute some 18 billion dollars to the national economy during that period. This fact was cited as evidence

of the railroads' continuing importance by A. N. Williams, chairman of the board, Lehigh Valley, and chairman, Committee on Public Relations, Eastern Railroad Presidents Conference, in a written contribution of his views presented to the New York Railroad Club on the occasion of its 67th annual anniversary dinner held on December 7.

Although industrial depression prevailed during these seven years, Mr. Williams pointed out, the railroads nevertheless paid out more than 11½ billion dollars for wages, nearly 2 billions to government for taxes and about 4½ billions for fuel, materials and supplies. "In short, while the railroads themselves were passing through the worst depression in history, they made an important contribution—more than 18 billion dollars—to the national economy. Not so bad for an industry which some term 'obsolete,' and others regard as a 'problem.'" Even more important, during these "lean" years, the roads spent more than 1,700 million dollars for improvement to plant and equipment. Meanwhile, during the same period, railroad securities outstanding in the hands of the public actually declined more than 900 million dollars in value.

It was Mr. Williams' opinion that while Americans—as a people—advocate a transportation policy fair to all parties, as individuals they subscribe to these statements only with reservations. "If we enjoy special advantages which give us an edge on our competitor we insist upon protecting that edge. We want all the facilities we now have—we will take more if we can get them. We want competition between the railroads themselves and between the railroads and all other transport agencies. We believe that this will keep everyone on his toes and enable us to play one against the other. We should face the cold facts here and now—we cannot have a sound transportation policy under these conditions."

He concluded: "Healthy competition in a fair field may be the life of trade and commerce. But cut-throat competition 'gets nothin' for nobody.' When we insist on cutting throats—we finally discover that we have been cutting the wrong throats. *Fair play for all is much more profitable than free play for only a few.*"

Far Apart on Revamping R. I.

(Continued from page 932)

sion that unless "something" was done quickly, his clients would have to take their property and go elsewhere. His main complaint was that only one interest coupon has been paid on the bond issues, despite the fact that it has been earned several times over. By going elsewhere, Mr. Williams explained that they would have to sell their property to the Louisiana & Arkansas or to some other road. The Choc-taw gives the Rock Island its access to Memphis, Tenn.

Mr. Williams also asserted that his group would not accept the examiner's plan, and

he placed the responsibility for the formulation of a plan on the shoulders of the first and refunding and the general mortgage committees, saying that nothing could succeed until these two largest groups got together. "We should be ashamed of the slowness with which this case has been handled," he concluded.

Cassius M. Clay, assistant general counsel for the Reconstruction Finance Corporation, accused the general mortgage and the first and refunding committees of "doing everything they could to defeat the interest of the R. F. C." The R. F. C., according to Mr. Clay, wants only the principal and interest on its loans and no more.

E. K. Hanlon, representing the Rock Island, Arkansas & Louisiana bondholders committee, urged the commission to approve a separate reorganization of that property so that it might be sold to the Louisiana & Arkansas. The L. & A., Mr. Hanlon asserted, has offered these bondholders much more than they can hope to get as a part of the Rock Island system as it comes out of bankruptcy. "Either let us go with the L. & A.," he said, "or give us a fair rental so that we can pay our bondholders the interest on their bonds." Examiner Conway had decided against dismembering the Rock Island system to the extent of permitting the L. & A. to purchase the R. I. A. L.

That the L. & A. is still willing to make good its offer to purchase the R. I. A. L. was made clear by J. R. Turney, who appeared as counsel for the L. & A. He told the commission that the Rock Island has no real monetary interest in the R. I. A. L. any more, if it ever had any, while his company has purchased in the open market some \$3,000,000 of the R. I. A. L.'s securities and has a real interest in buying the road to complete its system. He also accused the Rock Island of taking a rebate on all its own material that it ships over the lines of the R. I. A. L. Mr. Turney denied the charge that railroad labor on the R. I. A. L. was opposed to the consolidation because of inferior working conditions on the L. & A. by saying that the L. & A. had agreed to abide by any labor contracts now in force on the R. I. A. L. and would live up to the provisions of the so-called Washington Agreement.

Railroad labor, represented by Ezra Brainerd, Jr., opposed all proposals which would separate the R. I. A. L. from the Rock Island. The employees, Mr. Brainerd said, felt that working conditions were preferable on the R. I. A. L. and that they did not want to be affiliated with the L. & A. If the commission should decide that the public interest requires that the two roads be consolidated, then, according to Mr. Brainerd, the employees want the commission to attach the same labor conditions to the merger order as it did recently when it authorized the Rock Island to merge its Texas subsidiary, the Chicago, Rock Island & Gulf. These conditions, which provided for severance pay for five years for displaced employees and for compensation in case employees sustained losses in moving from Fort Worth, Tex., to Chicago, were detailed in the *Railway Age* for November 12, 1938, page 717. As pointed out in last week's issue, a unanimous Supreme Court upheld the constitutionality of

these provisions against an attack by the carrier.

The proposed separation of the R. I. A. L. from the Rock Island was opposed by B. F. Batts, general attorney and commerce counsel for the St. Louis Southwestern; Elmer A. Smith, general attorney for the Illinois Central; and H. H. Larimore, general attorney and I. C. C. counsel for the Missouri Pacific, mainly on the ground that it would create a new north-south trunk line which would divert traffic from existing lines. Mr. Batts feared that the combined R. I. A. L. and L. & A. would be in a position to bargain for excessive divisions from the Illinois Central, the Missouri Pacific, and the Cotton Belt. He accused the L. & A. of "injecting itself into a case which it should never have been in."

Mr. Larimore told the commission that the new combination contends that it will take 7,000 cars of traffic from the M. P. yearly. Mr. Smith took the position that the commission should not permit the creation of a new north-south line and that the public interest would not support it. What the L. & A. really is interested in, he said, was getting a chance at the traffic from New Orleans and Baton Rouge.

L. C. Fritch, a retired vice-president of the Rock Island, appeared briefly in behalf of certain employees of the road who purchased preferred stock in 1923 at the behest of the management. He advanced the hypothesis that the mileage of the system should be reduced from 8,000 to 6,000 miles due to unprofitable lines, and he concluded by saying that at least 1,500 miles should be taken under scrutiny before it is taken back into the new system.

Railroads Ready for Heavy Holiday Travel

Rail travel during the approaching holiday season is expected to be much heavier than in the corresponding period last year, according to the Association of American Railroads. Estimates of anticipated increases, made by the larger railroads in all sections of the country, range from 5 to 30 per cent.

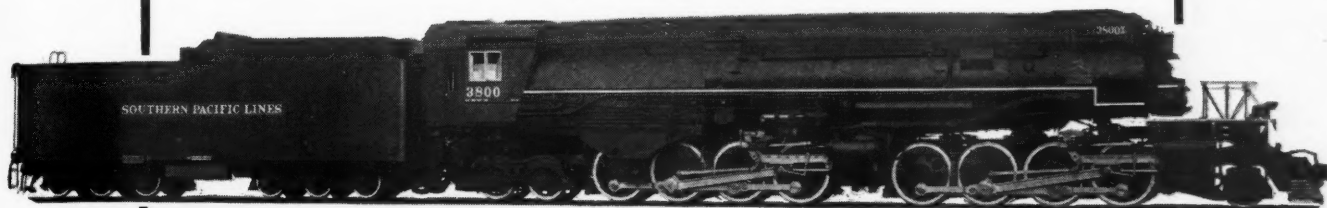
Better economic conditions and low fares, in some cases special rates, are given as the reasons for the predicted rise in railroad passenger traffic. The fact that Christmas and New Year's fall on Monday is also seen as a stimulant to rail travel.

"The railroads are prepared to handle peak loads over the holidays," said John J. Pelley, president of the A. A. R. "They have more than enough equipment for such a large movement. The swift, safe and efficient rail transportation of millions of people within a comparatively short space of time is largely a matter of preparation, coordination and cooperation."

Extra cars and locomotives have been made ready, and will be placed at those points where they are most likely to be needed. Additional sections of regularly scheduled trains and the running of special trains have been planned. More equipment has been provided to accommodate shoppers in territories where suburban trains are operated. Forces have been augmented at many of the larger stations.

Shortly before Christmas, there is a

Continued on next left-hand page



SUPER-POWER

FOR THE

SOUTHERN PACIFIC

to meet today's increasing
traffic demands

Today's traffic demands speed and power. The Southern Pacific's answer to these demands is the fleet of twelve new super-power 2-8-8-4 Mallets recently delivered by Lima for service on high-speed freight and passenger runs.

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO



great increase in the amount of mail and express which goes by rail. In order to enable passenger trains to maintain their schedules and at the same time to speed up mail and express traffic, many railroads will operate trains consisting of nothing but mail and express.

Since it is not always possible to measure in advance the passenger business that will develop from day to day, particularly coach travel, the volume of traffic will be carefully watched. Cars will be added and removed from regular trains as conditions warrant, and extra sections will be set up and operated on short notice.

"This flexibility of service gives the railroads great advantage in handling peak loads of traffic," Mr. Pelley pointed out, "for they are thus able to give the public practically normal service during rush periods."

Preparations for taking care of this year's holiday travel by rail actually started several weeks ago, Mr. Pelley said. How much passenger traffic is anticipated, on what days and between what hours it will probably be heaviest, and at what points it will be concentrated have been determined as accurately as possible by each railroad. This information was based on careful records kept from year to year, figures on the current trends, and local situations.

Railroads ascertained what they believe will be their needs at meetings of their chief passenger traffic and operating officers and representatives of the Pullman Company. Terminals in large cities which serve more than one railroad have also held similar conferences and prepared special regulations designed to prevent congestion and delay during the heavy travel period.

Equipment and Supplies

LOCOMOTIVES

THE CHICAGO, ROCK ISLAND & PACIFIC has undertaken a locomotive modernization program calling for the expenditure of about \$600,000. Roller bearings are being applied to 55 locomotives, of which 40 are in freight service and 15 in passenger service. In addition to the installation of roller bearings, some of the passenger locomotives are being rebuilt.

FREIGHT CARS

THE UNITED FRUIT COMPANY has ordered 77 flat cars of 25 tons' capacity from the Magor Car Corporation. These cars are for service in Costa Rica.

PASSENGER CARS

THE PACIFIC ELECTRIC is inquiring for 10 electric cars for passenger service.

THE COLORADO & SOUTHERN and its subsidiary, the Ft. Worth & Denver City, have applied to the Reconstruction Finance Corporation for loans totaling \$1,300,000 to finance the purchase of two new stainless

steel Diesel-electric streamlined trains. The application stated that the Diesels can be purchased from the Electro-Motive Corporation for \$376,000 each, while each train of four cars can be purchased from the Edward G. Budd Manufacturing Company at a price of approximately \$304,500.

Supply Trade

Iron & Steel Products, Inc., Chicago, has closed its Tulsa, Okla. branch office and will handle all business of that territory from Chicago.

Louis H. Brendel, assistant sales manager of the Hancock Valve Division of **Manning, Maxwell & Moore, Inc.,** Bridgeport, Conn., has been promoted to assist **C. H. Butterfield**, general sales manager of the company.

H. B. Gay, third vice-president and general sales manager, also a member of the board of directors of **The Electric Storage Battery Company**, retired from



H. B. Gay

active service on December 1, after 38 years in the employ of the company. Mr. Gay began his career in the sales department and in a few months was assigned to Baltimore, Md., as manager of that branch. Two years later, in 1903, he was advanced to the managership of the Cleveland, Ohio, branch, which position he occupied for 17 years. Mr. Gay was transferred to Philadelphia, Pa., in 1920 and was appointed general sales manager. In 1926 he was elected fourth vice-president, and in 1928, third vice-president and a member of the board of directors.

Walter F. Kasper, vice-president and vice-chairman of the board of Fairmont Railway Motors, Inc., Fairmont, Minn., has been elected president and chairman of the board, to succeed **Howard M. Starrett**, deceased, and has been succeeded by **Robert H. McCune**, as announced in the *Railway Age* of December 9. Mr. Kasper entered the employ of Fairmont in 1913, after graduating from the mechanical engineering department of the University of Minnesota, and has been with that company continuously since that time, as head

of the engineering department. In 1919, he was also placed in charge of the sales department as chief engineer and sales manager, which position he held until 1929, when he was elected vice-president in charge of engineering and sales. In June, 1939, he was also made vice-chairman of the board. In addition to his new duties he will as heretofore continue actively in charge of engineering and sales.

Mr. McCune has been engaged in the practice of law in Fairmont since 1917, except for a year and a half which he spent in military service during the World War. He has been actively interested in the management of Fairmont Railway Motors, having served as general counsel for many years and as a director since 1926. He plans to retire from the general practice of law and devote his entire time to the affairs of Fairmont Railway Motors.

OBITUARY

O. L. Manning, vice-president of the North American Car Corporation, Chicago, died in that city on December 8. Mr. Manning had been in poor health for several years, and had been confined to bed for the last four weeks. He began his railroad career in the transportation department of the Chicago, Milwaukee, St. Paul & Pacific, and later became associated with the Lemac Carriers Company. In 1918, he entered the employ of the North American Car Corporation, and has been in charge of the Poultry Car Division in recent years.

Frank Ludlam, assistant secretary and assistant treasurer of The International Nickel Company, Inc., died on December 8, at his home in New York City after a long illness. Mr. Ludlam was born at Bloomfield, N. J., on November 3, 1873. He attended the Lyons School in New York City and the Columbia School of Mines, where he studied architecture. After spending several years in architecture and real estate, Mr. Ludlam took a position with The Carnegie Steel Company at Pittsburgh, Pa. In March, 1903, he entered the service of The International Nickel Company.

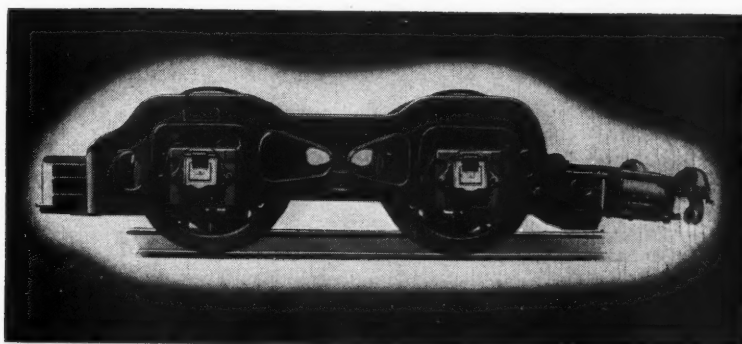
Construction

ATCHISON, TOPEKA & SANTA FE.—This company has been authorized to construct an extension of its so-called Loving spur from the terminus thereof at a point about 5.1 miles northeast of the station at Loving, N. Mex., northeasterly approximately 10 miles. The construction must be commenced on or before January 1, 1940, and completed on or before June 1, 1940.

LEHIGH VALLEY.—The New York Public Service Commission has ordered a change in the location of River Boulevard in Rochester, N. Y., and directed that alterations be made in the bridge structure of the Lehigh Valley to conform to the new alignment of the highway. The estimated cost of reconstructing the bridge is \$54,000.

Continued on next left-hand page

A REAL CAPACITY INCREASER TO MEET THE INCREASE IN TRAFFIC



* Trademark Registered United States Patent Office

The Locomotive Booster!

Traffic is steadily increasing and the problem of keeping it rolling is becoming more and more serious. Franklin offers a quick, inexpensive way to meet these increased demands . . . *with your old power.* » » » By incorporating The Locomotive Booster* on your existing locomotives you can gain the added power that will help you to start the increased loads . . . smoothly and quickly. Don't wait until you are swamped with traffic. Prepare now by boosting your hauling capacity . . . with Locomotive Boosters!



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
CHICAGO
MONTREAL

December 16, 1939

32

Financial

ALABAMA, TENNESSEE & NORTHERN.—*Dismissal of R. F. C. Application.*—Division 4 of the Interstate Commerce Commission, at the request of this company, has dismissed its application for approval of the purchase by the Reconstruction Finance Corporation of \$575,000 of its four per cent, 10 year first mortgage bonds.

BALTIMORE & OHIO.—*Extension of Maturity.*—This road has asked the Interstate Commerce Commission to modify its order of September 15 so as to authorize an extension until November 8, 1944, of the maturity date of \$2,955,000 of four per cent serial collateral five-year notes held by the Reconstruction Finance Corporation. The commission's order had authorized an extension of five years from the effective date of the road's interest adjustment plan, but not later than August 1, 1944; and the present application asks that such order be brought into conformity with the court decree which has the effect of extending the maturity until the above-mentioned November 8, 1944, date.

CHICAGO & EASTERN ILLINOIS.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has certified to the United States District Court for the Northern District of Illinois the following expenses incurred by it in the reorganization proceedings of this company under section 77 of the Bankruptcy Act:

Bureau of Accounts, \$9,503; Bureau of Valuation, \$1,304; and the commission for expenses incurred in the submission of the plan to the creditors, \$683.56. Section 77(e) provides that the expense of submission of the plan to creditors and stockholders shall be certified by the commission and shall be borne by the debtor's estate.

CHICAGO & NORTH WESTERN.—*Equipment Trust Certificates.*—This company has been authorized to assume liability for \$1,800,000 of 2½ per cent equipment trust certificates, maturing in 10 equal annual installments of \$180,000 on December 15 in each of the years from 1940 to 1949, inclusive. The issue has been sold at 102.14 to the First Boston Corporation, acting on behalf of itself and three associates, making the average annual cost of the proceeds to the company approximately 2.07 per cent.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—*Chairman of the Board.*—The federal district court at Chicago on December 1 authorized Charles M. Thompson, trustee of the Chicago & North Western, to accept the position of chairman of the board of directors of the Chicago, St. Paul, Minneapolis & Omaha, a subsidiary of the North Western.

COLORADO & SOUTHERN-FORT WORTH & DENVER CITY.—*R. F. C. Loan.*—These companies have asked the Interstate Commerce Commission to approve a plan whereby they would borrow from the Reconstruction Finance Corporation \$1,300,000 to finance the purchase of two new

Diesel-electric streamlined Zephyr-type trains to be operated in daily overnight service over the Colorado & Southern and the Fort Worth & Denver City between Denver, Colo., and Dallas, Tex., on a schedule six hours faster than is now in effect. The two companies estimate that the installation of the new trains would increase passenger earnings and result in savings totaling \$335,844 a year. They would issue and sell to the Reconstruction Finance Corporation three per cent equipment trust certificates to mature serially over a period of 10 years. In separate applications the C. & S. asked for a loan of \$680,500, while the Fort Worth & Denver City requested \$619,500. The application pointed out that the Diesel-electric locomotives can be purchased from the Electro-Motive Corporation for \$376,000 each, while each train of four cars can be obtained from the E. G. Budd Manufacturing Company at a price of around \$304,500.

ERIE.—*Equipment Trust Certificates and R. F. C. Financing.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$3,000,000 of 2½ per cent equipment trust certificates, maturing in 20 semiannual installments of \$150,000 on June 1, and December 1 in each of the years 1940 to 1949, inclusive. At the same time Division 4 authorized the Reconstruction Finance Corporation to purchase the entire issue for itself, at a price not in excess of par and accrued dividends.

EVANSVILLE & OHIO VALLEY.—*Acquisition, Operation and Securities.*—This company, a new company, has been authorized by Division 4 of the Interstate Commerce Commission to acquire and operate the electric railway property owned by the Evansville & Ohio Valley Railway Company, a bankrupt, extending from Evansville, Ind., to Grandview, 34.6 miles, with a branch line from Richland Junction, Ind., to Richland, 3.4 miles.

At the same time Division 4 has authorized this company to issue \$83,000 of first mortgage six per cent income bonds and 830 shares of common stock with a par value of \$100 a share in connection with the financing of the acquisition.

GULF, MOBILE & OHIO.—*Joint Operation.*—This company has asked the Interstate Commerce Commission to approve contracts for joint operation over lines of the Southern between Memphis, Tenn., and Corinth, Miss., and between Haleyville, Ala., and Birmingham, a total of 179 miles. The new contracts either supplement or supplant the existing contracts covering the operating by the receivers of the Mobile & Ohio over these lines. The commission recently authorized the Gulf, Mobile & Northern and the Mobile & Ohio to merge there properties into a new company, the Gulf, Mobile & Ohio.

MISSOURI PACIFIC.—*Delisting of Securities.*—The Securities and Exchange Commission issued an order on December 6 directing that the registration of the five per cent cumulative convertible preferred stock, \$100 par value, and the common stock, \$100 par value, of this company be

withdrawn 30 days thereafter unless appropriate amendments are filed within that period. The order was based upon the failure of the balance sheets filed with the application for registration, and annual reports for the years 1935 and 1936, to disclose a liability of the Missouri Pacific arising out of certain contracts previously entered into with Terminal Shares, Inc. The stocks are listed on the New York Stock Exchange.

ILLINOIS CENTRAL.—*Abandonment by the Yazoo & Mississippi Valley.*—The Yazoo & Mississippi Valley has been authorized by Division 4 of the Interstate Commerce Commission to abandon part of a branch line extending from Spanish Fort, Miss., in a southwesterly direction to the junction with its main line at Kelso, 11.3 miles.

LEHIGH VALLEY.—*Pledge of Bonds.*—This company has asked the Interstate Commerce Commission for authority to extend for two years from December 31, 1939, the time in which it may pledge \$10,400,000 of general consolidated five per cent bonds as collateral for short term notes evidencing present bank loans.

MISSOURI PACIFIC.—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a branch line extending from LeRoy, Kans., to Madison, 29.5 miles.

MONTANA, WYOMING & SOUTHERN.—*Financial Adjustment.*—The Interstate Commerce Commission, in a divided decision, with Commissioners Mahaffie and Eastman dissenting and Splawn and Patterson taking no part in the case, have approved a plan of reorganization for this company under the recently-enacted Chandler Act, which would authorize it to modify the provisions of \$457,000 of its first mortgage gold bonds by making a cash payment of 15 per cent of the principal, by extending the due date for 10 years from September 1, 1939, of the unpaid principal amount, by reducing from five to three per cent the annual fixed interest rate on the extended bonds, with a provision for an additional noncumulative contingent payment up to two per cent per year, together with other minor changes as provided in a proposed plan, dated May 1, 1939.

Commissioner Mahaffie, in his dissenting opinion, which was concurred in by Chairman Eastman, criticized the finding of the majority, pointing out that under the Chandler Act and under section 20a of the Interstate Commerce Act authorizing the issuance or modification of securities as proposed in a plan of adjustment must include certain "very definite findings." "Among them," he continued, "is the finding that the corporation's inability to meet its debts matured or about to mature is reasonably expected to be temporary only. I am not convinced that this finding can properly be made on this record."

Commissioner Mahaffie also reminded his colleagues that the act requires a finding that the plan of adjustment is in the public interest and in the interest of each class of creditors and stockholders. "The bondholders are creditors," he wrote. "The



TRENANCE VIADUCT

ENGLAND

This viaduct, which is one of the most important in southwestern England, is located on the main-line of the Great Western Railway near the station of New-quay, Cornwall. The viaduct is 450 ft. in length and consists of nine spans carrying the tracks 75 ft. above the Trenance Valley. This viaduct, which was originally constructed of steel girders supported on stone

piers, has been remodeled and widened, the steel girders now being replaced by granite arches.

★ ★ ★

The Security Sectional Arch, from its introduction 29 years ago, has been constantly improved to keep pace with railroad design, and is today the standard on American railroads.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

**HARBISON-WALKER
REFRACTORIES CO.**

Refractory Specialists



**AMERICAN ARCH CO.
INCORPORATED**

60 EAST 42nd STREET, NEW YORK, N. Y.

*Locomotive Combustion
Specialists*

proposed plan cannot be said to be in the best interest of the bondholders in that it contemplates a reduction in interest rate to the bondholders, which will tend further to reduce the market value of the bonds, with no shrinkage in the equity of the stockholders. On the contrary, to the extent of \$10,000 per year, funds otherwise available for the payment of contingent interest may be used to purchase bonds in the market so as to benefit stockholders at the expense of the bondholders."

Mr. Mahaffie then supports his thesis that the proposed plan is inequitable to the bondholders by quoting from a United States Supreme Court decision in the Louisville Trust Co v. Louisville, New Albany & Chicago Ry. Co., 174 U.S. 647, cited with approval in the case of Case, et al. v. Los Angeles Lumber Products Co., Ltd., (decided November 9, 1939) in which the Court stated that "any arrangement of the parties by which the subordinate rights and interests of stockholders are attempted to be secured at the expense of the prior rights of either class of creditors comes within judicial denunciation." In the instant proceeding the plan of adjustment was agreed to by the stockholders and a majority of the bondholders.

"The latter (the bondholders) are scattered, small holders," he concluded, "and it does not appear that they have been able to take steps to protect their interests through a committee or any other similar measure. Such information as they have received has come to them from the management, which represents the stockholders. It was probably in anticipation of such situations that Congress provided in the statute that in making the required findings we may not take into consideration acceptances by security holders. Agreement upon the part of the stockholders and a majority of the bondholders is, therefore, not a substitute for our finding that the plan is in the best interest of each class of creditors."

NEW YORK CENTRAL.—Abandonment.—This company has asked the Interstate Commerce Commission for authority to abandon its Lansing Branch, extending from Lansing, Mich., in a southerly direction to Springport, 23.6 miles.

NEW YORK CENTRAL.—Equipment Trust Certificates and R. F. C. Financing.—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for \$9,000,000 of 2½ per cent equipment trust certificates, maturing in 10 equal annual installments of \$900,000 on December 1 in each of the years from 1940 to 1949, inclusive. At the same time Division 4 authorized sale of the certificates to the Reconstruction Finance Corporation at par and accrued interest with the stipulation that the company agree with the R. F. C. that it will spend within one year from October 1, 1939, not less than \$3,600,000 in repairing and reconditioning its own equipment. This is the first time that an R. F. C. loan has contained the latter condition.

NEW YORK, NEW HAVEN & HARTFORD.—Reorganization of the Boston & Providence.—Examiner Harvey H. Wilkinson

has submitted to the Interstate Commerce Commission for its approval a plan of reorganization for the Boston & Providence which would transfer all of its properties and assets to the New York, New Haven & Hartford. In consideration therefor, the New Haven, upon consummation of its reorganization, would issue directly to the holders of the Boston & Providence debentures New Haven first and refunding mortgage four per cent bonds in an amount equal to the principal of and accrued interest on such debentures, after crediting to such accrued interest the \$81,547 of cash in an existing sinking fund, and would issue directly to the Boston & Providence stockholders New Haven first and refunding mortgage four per cent bonds in an amount equal to 20 per cent of the par value of the Boston & Providence stock outstanding excluding that held in the sinking fund, 40 per cent in New Haven income mortgage 4½ per cent bonds and 40 per cent in New Haven preferred stock.

The New Haven, in addition, would assume and pay all reorganization expenses of the Boston & Providence. All claims of the Boston & Providence, or its trustees, against the New Haven or the trustees of the New Haven for damages resulting from any and all breaches of the covenants contained in the Boston & Providence lease and from the rejection of the lease, and all claims of the New Haven, or its trustees, for losses or expenditures incurred or made by them in operation of the Boston & Providence would be mutually waived and surrendered. These recommendations were also contained in Examiner Wilkinson's proposed plan of reorganization for the New Haven which was reviewed in the *Railway Age* for November 25, page 818.

A notice to the parties of record in the proceeding stated that exceptions to the proposed report must be filed in Washington and served so as to reach other counsel of record on or before January 4, 1940; replies to exceptions may be filed and served on or before January 14, 1940.

NORTHERN PACIFIC.—Equipment Trust Certificates and R. F. C. Financing.—This company has asked the Interstate Commerce Commission for its approval of a plan whereby it would assume liability for and sell to the Reconstruction Finance Corporation \$5,000,000 of 2¾ per cent equipment trust certificates, maturing in 20 equal semiannual installments of \$250,000 on August 1, 1940 and February 1, 1941, and on each February 1 and August 1 thereafter, to and including February 1, 1950. The proceeds would be used as part of the purchase price of 1,000 50-ton steel sheathed, wood lined box cars, 500 50-ton all-steel drop bottom gondola cars, 400 50-ton all-steel hopper bottom cars, and 100 70-ton steel multiple service ballast cars, costing a total of \$5,560,000.

PITTSBURGH & WEST VIRGINIA.—Extension of R. F. C. and Bank Loans.—This company has asked the Interstate Commerce Commission for permission to extend for three years \$4,201,607 of Reconstruction Finance Corporation loans, due December 31. At the same time the company is taking steps to effect a similar extension

of bank loans and Pennroad Corporation loans totaling \$3,338,354.

RAILWAY EXPRESS AGENCY.—New Director.—George D. Brooke, president of the Chesapeake & Ohio, has been authorized by Division 4 of the Interstate Commerce Commission to hold the position of director of this company.

TENNESSEE CENTRAL.—R. F. C. Loan and Equipment Trust Certificates.—This company has asked the Interstate Commerce Commission to approve a plan whereby it would issue and sell to the Reconstruction Finance Corporation \$185,000 of 2¾ per cent equipment trust certificates, maturing in 20 semiannual installments of \$10,000 on July 1, 1940, and the same amount on January 1, and July 1, thereafter, to and including July 1, 1942, and in the amount of \$9,000 on January 1, and July 1, in each of the years thereafter to and including January 1, 1950. The proceeds would be used to purchase 65 all-steel 50-ton hopper cars and one Diesel-electric switching locomotive.

WABASH.—Abandonment.—This company would be denied the right to abandon its Glasgow branch, extending from Salisbury, Mo., to Glasgow, 15.4 miles, if the Interstate Commerce Commission adopts a recommended order of its Examiner J. S. Prichard.

"It would appear," the examiner concluded, "that the applicants' chief reason for the proposed abandonment is the apprehension that the branch will lose the greater portion of the transportation business of the Glasgow grain elevator, owing to the latter's apparent choice for cheaper transportation by water. Sufficient time has not elapsed to permit of a definite conclusion as to whether the branch should be abandoned immediately. There appears to be sufficient traffic in the tributary territory to warrant continued operation of the branch if the shippers choose to patronize it. They should be given full opportunity to demonstrate their ability to provide sufficient traffic to insure continued operation on a profitable basis. In the meantime the applicants may find a more economical means of operating the branch."

WHEELING & LAKE ERIE.—Dividend.—Directors have declared a dividend of \$4 on the common stock of this company, the last such disbursement (\$5) having been made two years ago.

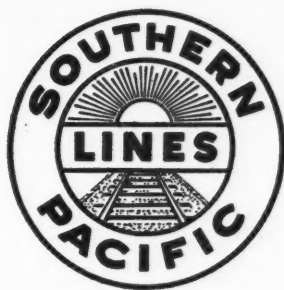
Average Prices of Stocks and Bonds

	Dec. 12	Last week	Last year
Average price of 20 representative railway stocks...	31.84	32.41	29.79
Average price of 20 representative railway bonds...	58.25	58.43	59.98

Dividends Declared

New York, Lackawanna & Western. — \$1.25, quarterly, payable January 2 to holders of record December 12.
 Norfolk & Western.—Extra, \$5.00, payable December 22 to holders of record December 4.
 Philadelphia, Baltimore & Washington.—\$1.50, semi-annually, payable December 30 to holders of record December 15.
 Pittsburgh, Ft. Wayne & Chicago.—\$1.75, quarterly; Preferred, \$1.75, quarterly, both payable January 2 to holders of record December 11.
 Virginian. — \$4.00, payable December 27 to holders of record December 16.
 West Jersey & Seashore.—\$1.50, semi-annually, payable January 2 to holders of record December 15.

Continued on next left-hand page



Southern Pacific's Modern Locomotives Are Equipped With

ELESCO TYPE "E" SUPERHEATERS

ELESCO TANGENTIAL STEAM DRYERS

ELESCO SUPERHEATED STEAM PYROMETERS

AMERICAN MULTIPLE-VALVE THROTTLES

*... all factors in the design of
a modern steam locomotive.*



THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.

60 East 42nd Street, NEW YORK

122 S. Michigan Ave., CHICAGO

Canada: THE SUPERHEATER COMPANY, LTD., MONTREAL

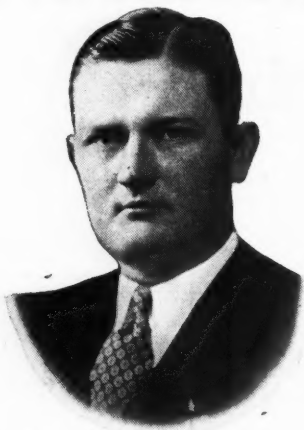
A-1375

Superheaters • **Exhaust Steam Injectors** • **Feedwater Heaters** • **American Throttles** • **Pyrometers** • **Steam Dryers**

Railway Officers

EXECUTIVE

Johnson O. Couch, whose election as assistant vice-president of the Kansas City Southern and the Louisiana & Arkansas, with headquarters at Kansas City, Mo., was announced in the *Railway Age* of September 23, was born in Athens, La. on



(c) Baehrach

Johnson O. Couch

October 1, 1904, and attended Henderson Brown College, Arkadelphia, Ark., later graduating from the Virginia Military Institute, Lexington, Va., and completing the student course in electrical engineering with Westinghouse Electric & Manufacturing Company at Pittsburgh, Pa. Mr. Couch entered railway service in July, 1929, as a chainman in the engineering department of the Louisiana & Arkansas, and was promoted to rodman in January, 1930. In April, 1931, he was appointed electrical engineer in the mechanical department at Minden, La., and became industrial engineer in charge of industrial and agricultural development in January, 1932. In May, 1933, he was sent to Shreveport, La., and assigned to special traffic solicitation work. Mr. Couch was promoted to assistant to the president of the L. & A. and the Louisiana, Arkansas & Texas, in charge of all eastern solicitation and with headquarters in New York, in September, 1934, and in March, 1939, he was appointed assistant to the vice-president in charge of traffic of the Kansas City Southern, with headquarters at Kansas City, Mo. His election as assistant vice-president of the K. C. S. and the L. & A. was effective September 1.

FINANCIAL, LEGAL AND ACCOUNTING

Glenn C. Wilber has been appointed a general attorney on the Pere Marquette, with headquarters at Detroit, Mich., a newly created position.

Albert Victor Tate, chief clerk to the general claim agent of the Gulf, Colorado & Santa Fe at Galveston, Tex., has been promoted to assistant general claim agent,

with the same headquarters, succeeding **S.**

R. Biering, whose death on November 11 was announced in the *Railway Age* of November 18.

E. A. Staman, treasurer and assistant secretary of the Louisiana & Arkansas, has been elected secretary and treasurer, with headquarters as before at Shreveport, La.

W. L. Palmes has been appointed assistant chief accounting officer of the Mobile & Ohio, with headquarters at Mobile, Ala., a newly created position.

E. P. Wagner has been elected secretary and assistant treasurer of the Midland Valley, with headquarters at Philadelphia, Pa., succeeding **J. R. K. Delany**, who has resigned.

OPERATING

E. V. King has been appointed superintendent of Potomac yard (Alexandria, Va.) of the Richmond, Fredericksburg & Potomac, succeeding **R. M. Colvin**, deceased.

H. Thayer, assistant division superintendent on the Chicago & North Western, with headquarters at Winona, Minn., has been promoted to superintendent of the Black Hills division, with headquarters at Chadron, Neb. Mr. Thayer succeeds **H. S. Smith**, who has been transferred to the Dakota division, with headquarters at Huron, S. D., relieving **James J. Burns**, who retired because of ill health on December 1.

W. L. Mueller, trainmaster on the Chicago & North Western at Mason City, Iowa, has been promoted to superintendent of the Wyoming division, with headquarters at Casper, Wyo., succeeding **H. D. Purviance**, who has been transferred to the Sioux City division, with headquarters at Sioux City, Iowa. Mr. Purviance replaces **L. B. Kendall**, who has been transferred to the Madison division, with headquarters at Madison, Wis., relieving **A. J. Worthman**, who retired on December 1.

R. M. Brown, assistant superintendent on the Canadian National at Regina, Sask., has been transferred to Edmonton, Alta., replacing **Sherman Smith**, whose promotion to superintendent, with headquarters at Calgary, Alta., was announced in the *Railway Age* of November 4. **T. R. Currie**, assistant superintendent at North Battleford, Sask., has been transferred to Regina, relieving Mr. Brown and **F. Willcock**, assistant superintendent at Rainy River, Ont., has been transferred to North Battleford, succeeding Mr. Currie.

Kenneth Louis Moriarty, whose promotion to division superintendent on the Denver & Rio Grande Western, with headquarters at Grand Junction, Colo., was announced in the *Railway Age* of November 25, was born at Joliet, Ill. on November 18, 1896, and entered railway service in December, 1917, in the engineering department of the Chicago Great Western, later being promoted through various positions to assistant engineer in the maintenance of way department. In 1924, he went with

the D. & R. G. W. as a division engineer, with headquarters at Gunnison, Colo., and after serving in this capacity at various points, was appointed roadmaster at Green River, Utah, in 1933. Two years later Mr. Moriarty was promoted to trainmaster at Glenwood Springs, Colo., and on November 10, 1938, he was advanced to assistant superintendent at Grand Junction, holding the latter position until his recent appointment, which was effective November 16.

N. Newlin Baily, whose appointment as superintendent of the Reading division of the Reading, with headquarters at Reading, Pa., was reported in the *Railway Age* of December 9, was born on August 8, 1903, at Philadelphia, Pa., and was graduated from the University of Pennsylvania in 1925. Mr. Baily entered the engineering department of the Reading at Philadelphia as levelman on October 1, 1925, and became assistant superintendent of the Harrisburg division the following month, being transferred in the latter capacity to the Reading division on March 8, 1926. He was appointed yardmaster at Catawissa, Pa., on July 31, 1926, and assistant to trainmaster of the Harrisburg division on March 1, 1928. On February 1, 1929, he was appointed assistant trainmaster at Cressona, Pa., and was transferred in the same capacity to St. Clair, Pa., on June 16, 1932. Mr. Baily was appointed assistant superintendent of the Philadelphia division on July 1, 1933, and was transferred in the same capacity to the Reading division on September 1, 1936, the position he held until his appointment as superintendent of the Reading division, effective December 1.

Effective December 31, **J. A. Christie**, superintendent of the Valley division of the Atchison, Topeka & Santa Fe, with headquarters at Fresno, Cal., will retire. Mr. Christie was born in Ontario and entered railway service in 1883 on a part-time clerical job on the Grand Trunk Western at Port Huron, Mich., while finishing his education in day and night schools. He later entered shop and then engine service, serving with various railroads in the East. In 1895, he went with the Santa Fe as a locomotive engineer on the Arizona division at Needles, Cal., and in 1900 he transferred to the Valley division. Mr. Christie was promoted to road foreman of engines in 1903, and two years later he was advanced to the joint position of trainmaster-road foreman of engines on the Arizona division. In 1907, he served for several months as acting superintendent of the Valley division and later as trainmaster on that division until the spring of 1913, when he was promoted to superintendent of the Arizona division, with headquarters at Needles. Mr. Christie was transferred to the Terminal division, with headquarters at San Francisco in 1923, and to the combined Valley and San Francisco Terminal divisions, with headquarters at Fresno, in the spring of 1938.

S. D. Stainton, general agent of the Railway Express Agency, with headquarters at Jacksonville, Fla., has been appointed superintendent of the Georgia division, with headquarters at Atlanta, Ga.

Continued on next left-hand page

ineer,
and
various
Green
er Mr.
ter at
ember
sistant
olding
point-
er 16.

tment
ivision
Read-
y Age
ust 8,
grad-
lvania
eering
elphia
nd be-
Har-
being
to the
He
wissa,
ant to
ion on
29, he
er at
in the
June
ed as-
delphia
trans-
eading
osition
uperin-
fective

ristie,
ion of
e, with
retire.
io and
a part-
Trunk
ile fin-
night
d then
is rail-
nt with
neer on
al., and
Valley
oted to
nd two
e joint
man of
n 1907,
acting
on and
on until
omoted
ivision,
Christie
ivision,
isco in
nd San
a head-
of 1938.

of the
adquar-
een ap-
ia divi-
ta, Ga.
and page

High Speed and a Smooth Track for THE CITY OF DENVER - - - - With the help of YOUNGSTOWN TIE PLATES!

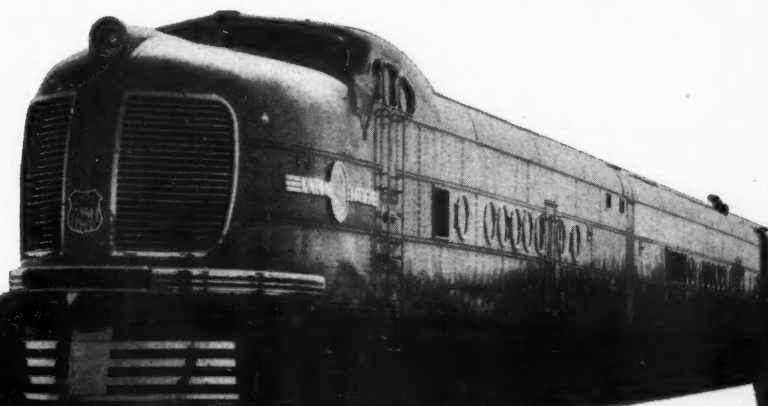


The City of Denver -- this beautifully streamlined unit of the Union Pacific and the Chicago & North Western passenger fleet -- rides a fine roadbed over thousands of Youngstown Tie Plates.

Youngstown Tie Plates are stepping stones to speed and safety for many a modern train. Accurately rolled to design or specification, tie plates are a specialty at Youngstown.

Buy Youngstown Tie Plates -- (and Spikes) -- to strengthen and improve track at low cost.

Also for the Transportation field -- Youngstown's YOLOY high tensile steel is a proven product assuring weight reductions of 25% to 35% and an increase of 10% in strength. Write for Bulletin describing YOLOY.



**THE
YOUNGSTOWN
SHEET AND TUBE COMPANY**
Manufacturers of Carbon and Alloy Steels
General Offices - YOUNGSTOWN, OHIO



Tie Plates and Spikes - Sheets
Plates - Conduit - Pipe and
Tubular Products - Tin Plate
Bars - Rods - Wire - Nails
16-11B

Mr. Stainton began express service as a deliveryman at Laurel, Miss., in September, 1904, and interrupted his service a year later to return to school. Three years



S. D. Stainton

later he returned to Laurel and in August, 1910, entered the messenger branch of the service. He then obtained clerical experience at Chattanooga, Tenn., from November, 1912, to December, 1917, when he entered military service. Returning in August, 1919, Mr. Stainton was correspondence clerk at Charleston, S. C., and on January 1, 1920, was appointed claim agent at Wilmington, N. C., then serving as route agent at Florence, S. C., and Rocky Mount, N. C. He was appointed supervisor of transportation in the Southern departments in October, 1926, and on February 1, 1935, became agent at Macon, Ga., being appointed general agent at Jacksonville a year later.

W. M. Mathews, superintendent of the Georgia division of the Railway Express Agency, with headquarters at Atlanta, Ga., has been appointed superintendent of organization for the Southern departments, with the same headquarters. Starting his express service as a deliveryman at Hawkinsville, Ga., on August 1, 1910, Mr. Math-



W. M. Mathews

ews later served as messenger and agent until he entered military service in December, 1917. Returning, he served as agent at Fitzgerald, Ga., Brunswick and Columbus, and also as route agent at Atlanta and Savannah. In July, 1924, he was appointed agent at Chattanooga, Tenn.,

going to Atlanta as general agent on April 1, 1936. He was promoted to superintendent of the Georgia division on October 15, 1938, in which position he served until his recent appointment.

TRAFFIC

J. M. Sellers has been appointed assistant general freight and passenger agent of the Prescott & Northwestern, with headquarters at Prescott, Ark., succeeding **J. H. Thomas**.

S. O. Neyman, general agent on the Columbus & Greenville at Birmingham, Ala., has been transferred to Columbus, Miss., succeeding **J. P. Balch**, who has been transferred to Birmingham, replacing Mr. Neyman.

G. C. Bowen, chief clerk to the vice-president on the Kansas City Southern and the Louisiana & Arkansas, in Kansas City, Mo., has been appointed assistant general freight agent, with the same headquarters, a newly created position.

G. F. Hanson, district freight and passenger agent for the Chicago, Rock Island & Pacific at Buffalo, N. Y., has been promoted to general agent, passenger department, at Kansas City, Mo., succeeding **S. A. Gilliland**, who has retired.

C. G. Hammond has been appointed chief of divisions bureau of the Norfolk & Western, with headquarters at Roanoke, Va., succeeding **C. H. Pernter**, whose appointment as assistant general freight agent was reported in the *Railway Age* of September 9.

S. M. Lundberg, general agent on the Chicago Great Western at Kansas City, Mo., has been promoted to assistant general freight agent, with the same headquarters, succeeding **G. H. Shields**, who has been assigned to other duties, and the position of general agent at that point has been abolished.

E. A. Gorges has been appointed assistant general freight agent of the Toledo, Peoria & Western, with headquarters at Peoria, Ill., succeeding **E. V. Hill**, who has resigned, and **Mack Hulse**, assistant general freight agent, has been appointed industrial agent, with headquarters as before at Peoria.

Harry A. Krause, district passenger agent of the Reading, with headquarters at Philadelphia, Pa., has been appointed assistant general passenger agent, with the same headquarters, succeeding **John F. Buch**, who died on November 15. **William S. Cooke**, traveling passenger agent at Philadelphia, has been appointed district passenger agent, with the same headquarters.

Stanton Curtis, whose appointment as general passenger agent of the Gulf, Mobile & Northern and the Mobile & Ohio, with headquarters at St. Louis, Mo., and Mobile, Ala., was announced in the *Railway Age* of December 2, entered railway service in January, 1895, as a clerk to the ticket accountant on the Michigan Central at Detroit, Mich. After serving

in a clerical capacity on various railroads, he became, in January, 1903, a clerk in the general passenger office of the Southern at Washington, D. C. In September, 1905,



Stanton Curtis

he was promoted to passenger agent at Norfolk, Va., and in March, 1907, he was appointed chief clerk to the assistant general passenger agent at Chicago. Mr. Curtis was advanced to northwestern passenger agent, with the same headquarters, in December, 1909, and in September, 1913, he was appointed assistant general passenger agent at Chicago. In January, 1917, he was appointed division passenger agent at St. Louis and in March, 1920, he went with the Mobile & Ohio as general passenger agent, with headquarters at St. Louis.

Clifton Charles Gray, whose appointment as freight traffic manager of the Western Maryland at Baltimore, Md., was reported in the *Railway Age* of December 2, was born on March 13, 1892, in Knox County, Ill. Mr. Gray attended the Elementary Schools of Baltimore and Baltimore City College and studied transportation at the University of Pittsburgh. He entered railroad service in May, 1911, as stenographer with the Erie at Balti-



C. C. Gray

more, Md., later serving as chief clerk and traveling freight agent with that road. During the World War he was an officer in the Aviation Section, Signal Corps, U. S. Army. Mr. Gray entered the service of the Western Maryland as traveling freight agent, at Baltimore on February 1,

1920, becoming commercial freight agent at Minneapolis, Minn., on March 1, 1921, and division freight agent at Hagerstown, Md., on October 16, 1923. On February 1, 1927, he was appointed assistant general freight agent at Pittsburgh, Pa., and on December 1, 1930, became general freight agent there. He became assistant freight traffic manager at Baltimore on June 16, 1939, the position he held until his recent appointment as freight traffic manager.

George L. Oliver, whose appointment as general passenger agent of the Florida East Coast at St. Augustine, Fla., was reported in the *Railway Age* of December 9, was born on June 19, 1894, at Washington, D. C. Mr. Oliver attended grade school, high school and business college at Washington, D. C., and entered railroad service in April, 1917, as stenographer with the Atlantic Coast Line at Wilmington, N. C., and then served from June to November of that year as secretary to passenger traffic manager there.

Mr. Oliver served as clerk in the passenger department of the Atlantic Coast Line



George L. Oliver

at Wilmington from December, 1917, to April, 1918. After service in the United States Navy, he was clerk in the passenger department of the Southern at Washington, D. C., from May to December, 1919. Mr. Oliver returned to the Atlantic Coast Line in July, 1920, as stenographer at Washington, D. C., then serving as district passenger agent for that road at Montgomery, Ala., New York, Washington, D. C., and Miami, Fla., respectively. He then served in the latter capacity with the Florida East Coast at Miami, from September, 1925, to September, 1927, when he was appointed assistant general passenger agent at St. Augustine, Fla., being transferred in the same capacity to New York in October, 1933, and to Miami in July, 1938, where he remained until December 1 when he was appointed general passenger agent at St. Augustine.

Frank T. Sturtevant, whose appointment as freight traffic manager in charge of live stock and perishable traffic of the Baltimore & Ohio at Baltimore, Md., was reported in the *Railway Age* of November 11, was born December 12, 1888, at Washington Court House, Ohio. Mr. Sturtevant was educated in the public schools of New

Holland, Ohio, and entered the service of the Baltimore & Ohio, as clerk at Greenfield, Ohio, on August 15, 1910, becoming chief clerk there October 1, 1911. He later



Frank T. Sturtevant

became rate clerk in the division freight office at Chillicothe, Ohio, and on October 15, 1917, was transferred as clerk to Camp Sherman, Ohio, being appointed general agent there on July 1, 1918. On September 16, 1919, he was appointed city freight agent at Cincinnati, being promoted to commercial freight agent there March 1, 1920, and district freight agent July 1, 1921. The following September he became division freight agent at Chillicothe. Mr. Sturtevant was transferred to Akron, Ohio, as division freight agent on July 1, 1924, and to Youngstown, Ohio, in the same capacity June 1, 1928. On December 1, 1929, he was appointed assistant general freight agent at Cleveland and on April 1, 1931, was advanced to general freight agent at Baltimore in charge of perishable freight traffic, the position he held until his recent appointment as freight traffic manager.

J. D. Rahner, general passenger agent of the Florida East Coast, whose retirement on December 1 was announced in last week's *Railway Age*, has been a leader for 40 years in the phenomenally-successful development of Florida as a travel center,



J. D. Rahner

with his railroad experience encompassing the period from the old woodburners to the modern streamlined era. When Mr. Rahner began his railroad career in 1886

with the old Savannah, Florida & Western, Henry M. Flagler was just beginning his development work in St. Augustine; there was no railroad south of Daytona Beach; Palm Beach and Miami were unknown. In 1892 Mr. Rahner went to St. Augustine as chief clerk in the passenger department of the Jacksonville, St. Augustine & Halifax River, which was then owned by Henry M. Flagler and later became the Florida East Coast. He was named assistant general passenger agent in charge of the St. Augustine office in 1894, when the Florida East Coast was being extended south and Palm Beach was being created. He became general passenger agent of the line in 1896, the year Miami was founded.

As general passenger agent of the F. E. C. throughout its lifetime, Mr. Rahner was also one of the first of the subsequent large company of persons to engage in advertising the attractions of the East Coast of Florida and its newly-developed towns and resorts. During that early period the promotion work done under his direction was of crucial significance, because the area was not yet prosperous enough to advertise itself. But Mr. Rahner's work was not merely sectional—but national as well. He long played a prominent part in the activities of the American Association of Passenger Traffic Officers, serving as its president in the years 1928-1929.

ENGINEERING AND SIGNALING

R. W. Troth, signal inspector of the St. Louis-San Francisco, has been appointed acting signal engineer, with headquarters as before at Springfield, Mo., succeeding **I. A. Uhr**, who has been granted a leave of absence because of sickness.

Jesse H. Oppelt, whose promotion to superintendent of telegraph and signals of the New York, Chicago & St. Louis (Nickel Plate), with headquarters at Cleveland, Ohio, was announced in the *Railway Age* of December 2, was born at Washington, Iowa, on October 24, 1879, and after graduating from high school at Conneaut, Ohio, took a correspondence course in railway engineering. Mr. Oppelt entered railway service in 1901 as a rodman on the Nickel Plate, four years later being advanced to inspector of bridges and masonry. From 1907 to 1910, he served as supervisor of interlocking and supervisor of water service and was then appointed supervisor of signals. In this position he served successively at Bellevue, Ohio, and Cleveland, and on January 1, 1930, he was promoted to signal engineer, with headquarters at Cleveland, the position he held until his recent promotion, which was effective November 16.

Earl L. Mayne, whose promotion to office engineer in the office of the chief engineer of the Western lines of the Atchison, Topeka & Santa Fe at Amarillo, Tex., was announced in the *Railway Age* of December 2, was born at Darlington, Wis., on September 7, 1890, and graduated in civil engineering from the University of Colorado in 1914. He entered railway service on July 27, 1914, as a chairman in the division engineer's office on the Santa Fe at La Junta, Colo., and subsequently

Continued on second left-hand page



HIGH SUMMER EFFICIENCY

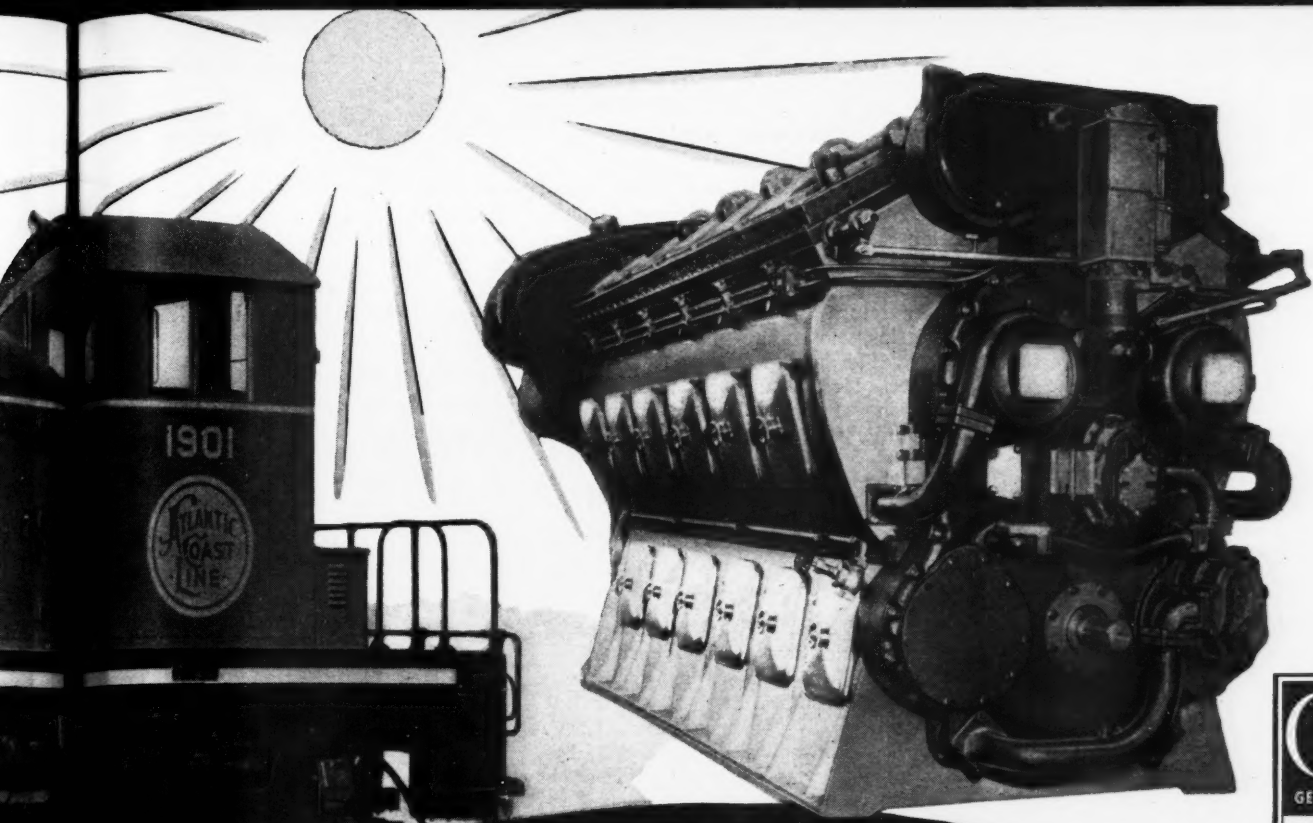
WHY put up with the usual winter hardships and their higher operating costs when EMC Diesel Switchers will operate at mid-summer efficiency throughout the winter?

The 75 per cent reduction in fuel expense—50 per cent reduction in overall locomotive costs—high availability—high tractive effort—carry through the entire year.

EMC "Clear-View" type Diesels, with no smoke or steam to ruin visibility, provide safer and faster switching 24 hours a day.



ELECTRO-MOTIVE
SUBSIDIARY OF GENERAL MOTORS



Y THROUGHTOUT ENTIRE YEAR



ECORPORATION
RS LA GRANGE, ILLINOIS, U. S. A.

served as a chainman and rodman at San Marcial, N. M., Las Vegas, N. M., and Pueblo, Colo. On August 1, 1915, he was promoted to transitman in charge of an inventory party engaged in I. C. C. valuation work. In October, 1916, he was transferred to the Plains division at Amarillo, and during the World War he served overseas with the A. E. F. He returned to the Santa Fe in June, 1919, as a transitman at Amarillo, a short time later being promoted to assistant engineer in charge of the design of reinforced concrete structures in the office of the chief engineer of the Western lines. In September, 1927, he was advanced to assistant office engineer, the position he held until his recent promotion.

William Mathew Punter, signal engineer of the Canadian National system, with headquarters at Montreal, Que., has retired and the duties of **R. G. Gage**, chief electrical engineer have been extended to include those of signal engineer. Mr. Punter was born in London, England, on April 23, 1873, and attended private school in Brussels Belgium and public school at Kensington, England. In 1892, he entered the employment of Saxby & Farmer, Ltd., railway signal engineers, in London, and from 1897 to 1900, he served as an assistant engineer in charge of the construction and installation of railway signals in various countries in Europe. Mr. Punter was appointed engineer of construction and Russian representative in 1900 and from 1905 to 1907 he served as engineer of construction in Great Britain and Ireland. In 1908, he was appointed manager of the Canadian branch of Saxby & Farmer, Ltd., at Montreal and in June, 1918, he went with the Canadian Northern (now part of the Canadian National) as signal engineer, Eastern lines, with headquarters at Toronto, Ont. Mr. Punter was promoted to signal engineer of the Canadian National system in April, 1923, with headquarters at Montreal, the position he held until his retirement.

George Henry Tinker, bridge engineer of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, retired on December 1, as reported in the *Railway Age* of December 9.

Mr. Tinker was born at Lawrence, Mass., on January 18, 1868, and graduated from the University of Nebraska in 1890. He entered railway service between terms of school in July, 1887, as an axman on the construction of the Burlington & Missouri River (now part of the Chicago, Burlington & Quincy) in Nebraska. From June, 1889, to January, 1890, he served as a rodman on the same road and in June, 1890, following graduation, he was appointed assistant on construction, later serving as assistant topographer and draftsman. From August, 1893, to April, 1899, he engaged in private practice as an engineer in San Diego County, Cal., but returned to the Burlington & Missouri River as a transitman on the later date. Mr. Tinker was promoted to division engineer on construction in January, 1900, and September, 1901, he went with the Fremont, Elkhorn & Missouri Valley (now part of the Chicago & North Western) as an assistant engineer. Several months later he

became an assistant engineer on the Colorado & Wyoming and in February, 1903, he left railroad service to become assistant engineer of the Minnequa Water Company, Minnequa, Colo. In April, 1904, Mr. Tinker returned to railroad service as a bridge inspector on the Nickel Plate and in July, 1905, he was promoted to assistant engineer. He was advanced to bridge engineer in January, 1907, the position he held until his retirement.

PURCHASES AND STORES

C. S. Mays has been appointed fuel agent on the Southern at Knoxville, Tenn., succeeding **E. G. Goodwin**.

H. O. Wolfe, division storekeeper of the Alton, with headquarters at Bloomington, Ill., has been appointed assistant to the purchasing agent, with headquarters at Chicago, a newly created position. **L. V. Foley**, assistant division storekeeper, has been promoted to storekeeper, with headquarters as before at Bloomington, succeeding to the duties of Mr. Wolfe.

OBITUARY

W. H. Failing, claims attorney of the Reading and Central of New Jersey, with headquarters at Philadelphia, Pa., and Jersey City, N. J., died suddenly on November 23.

John Edward Powers, division freight and passenger agent of the New York, Ontario & Western, with headquarters at Oneida, N. Y., died suddenly on December 12 at the age of 65.

John Wesley Whitaker, superintendent of terminals on the Southern, with headquarters at Chattanooga, Tenn., whose death on November 20 was announced in the *Railway Age* of December 2, was born at Flat Shoals, Ga., on September 11, 1872, and entered railway service on November 6, 1895, as a switchman on the Southern at Atlanta, Ga. In 1896, he was promoted to conductor and in 1898, he was advanced to assistant yardmaster at Atlanta, becoming general yardmaster at that point in 1906. Mr. Whitaker was promoted to superintendent of terminals at Chattanooga in 1919, and in 1920 he was appointed terminal trainmaster at Atlanta. In 1925, he was re-appointed superintendent of terminals, with headquarters at Jacksonville, Fla., and on November 1, 1926, he was transferred to Chattanooga, Tenn., where he remained until his death.

James Thomas Morrison, president of the Pullman Railroad Company, a subsidiary of Pullman, Incorporated, with headquarters at Chicago, died on December 7, at his home in that city, following a long illness. Mr. Morrison was born at Liberty, Mo., on October 12, 1870, and was educated in the public schools of St. Joseph, Mo. He commenced his railway career in 1890 as an office boy in the traffic department of the Chicago, Burlington & Quincy at St. Joseph, later being transferred to St. Louis, Mo. In 1894, he went with the Chicago, Milwaukee, St. Paul & Pacific as a traveling freight agent at St. Louis and

two years later he was appointed chief clerk in the general freight office at Chicago. In 1912, Mr. Morrison went with the Pullman Railroad as traffic manager and in 1914, he was elected vice-president. He was elected president on November 10, 1931.

Philip George Lang, Jr., engineer of bridges of the Baltimore & Ohio, with headquarters at Baltimore, Md., died in that city on December 9, after an illness of several weeks. Mr. Lang was born at Philadelphia, Pa., on September 24, 1883,



Philip George Lang, Jr.

and graduated from the University of Pennsylvania in 1905. Following his graduation, he was employed at the Pencoyd plant of the American Bridge Company until March, 1906, when he went with the South & Western (later the Carolina, Clinchfield & Ohio and now part of the Clinchfield) at Johnson City, Tenn. On December 4, 1907, he went with the Baltimore & Ohio as an assistant engineer in the bridge department at Baltimore. On May 1, 1917, he was advanced to chief bridge draftsman and on August 1, 1918, he was promoted to assistant engineer of bridges. Mr. Lang was further advanced to engineer of bridges on May 1, 1921, the position he held at the time of his death. Mr. Lang has long been active in the American Railway Engineering Association and various other engineering societies. He was president of the American Welding Society in 1938 and served as editor of the Bridge Section of the 1926, 1929 and 1939 editions of the *Railway Engineering and Maintenance Cyclopedic*, the latter edition of which is now on the press.

PITTSBURGH SCREW & BOLT CATALOG—The Pittsburgh Screw & Bolt Corp., Pittsburgh, Pa., has issued a 96-page, loose leaf catalog which presents specifications, price lists, contents of standard containers and weights, for its complete line of bolts, nuts, rivets and rods. The catalog also contains a section of general information and suggestions for ordering bolts, a section on rivets, including the standard specifications of the American Society for Testing Materials for boiler-rivet steel and boiler rivets, and for structural rivets. A complete index is included. The catalog is attractively printed and is wire bound with an imitation leather cover.

Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 134 Monthly Reports of Revenues and Expenses Representing 138 Class I Steam Railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF OCTOBER, 1939 AND 1938

Item	United States		Eastern District		Southern District		Western District	
	1939	1938	1939	1938	1939	1938	1939	1938
Miles of road operated at close of month	233,362	234,182	57,520	57,759	44,429	44,605	131,413	131,818
Revenues:								
Freight	\$355,104,050	\$293,743,527	\$148,659,508	\$114,751,530	\$69,876,968	\$59,139,877	\$136,567,574	\$119,852,120
Passenger	33,367,160	31,423,544	19,333,698	17,700,290	3,619,824	3,677,193	10,413,638	10,046,061
Mail	8,375,654	8,201,573	3,233,416	3,130,831	1,425,131	1,431,743	3,717,107	3,638,999
Express	5,223,187	5,322,598	2,407,153	2,239,834	786,712	984,046	2,029,322	2,098,718
All other operating revenues	17,647,348	14,692,981	8,484,988	7,084,054	2,049,857	1,874,544	7,112,503	5,734,383
Railway operating revenues	419,717,399	353,384,223	182,118,763	144,906,539	77,758,492	67,107,403	159,840,144	141,370,281
Expenses:								
Maintenance of way and structures	44,176,304	40,352,359	16,989,480	14,531,146	7,383,743	6,686,898	19,803,081	19,134,315
Maintenance of equipment	73,553,444	59,740,284	34,618,745	25,561,190	13,390,049	11,523,761	25,544,650	22,655,333
Traffic	8,984,137	8,548,042	3,392,122	3,128,834	1,638,066	1,624,539	3,953,949	3,794,669
Transportation—Rail line..	130,888,205	120,262,638	59,193,860	52,651,724	21,444,728	19,836,751	50,249,617	47,774,163
Transportation—Water line.	536,808	383,926	.....	.....	.....	.....	536,808	383,926
Miscellaneous operations ..	3,162,412	2,980,157	1,394,288	1,327,608	310,061	306,236	1,458,063	1,346,313
General	10,696,433	10,387,578	4,265,866	4,107,333	2,067,317	2,010,374	4,363,250	4,269,871
Transportation for investment—Cr.	459,694	300,500	76,940	45,521	51,609	34,411	331,145	220,568
Railway operating expenses	271,538,049	242,354,484	119,777,421	101,262,314	46,182,355	41,954,148	105,578,273	99,138,022
Net revenue from railway operations	148,179,350	111,029,739	62,341,342	43,644,225	31,576,137	25,153,255	54,261,871	42,232,259
Railway tax accruals	35,082,020	30,924,550	14,754,318	13,056,443	7,894,940	6,642,052	12,432,762	11,226,055
Railway operating income	113,097,330	80,105,189	47,587,024	30,587,782	23,681,197	18,511,203	41,829,109	31,006,204
Equipment rents—Dr. balance	8,613,937	8,521,366	4,256,417	3,643,288	217,099	124,563	4,574,619	4,753,515
Joint facility rent—Dr. balance	2,867,095	2,989,054	1,609,116	1,610,264	220,325	319,188	1,037,654	1,059,602
Net railway operating income	101,616,298	68,594,769	41,721,491	25,334,230	23,677,971	18,067,452	36,216,836	25,193,087
Ratio of expenses to revenue (per cent)	64.7	68.6	65.8	69.9	59.4	62.5	66.1	70.1
Depreciation included in operating expenses	16,949,021	16,995,270	7,510,305	7,496,401	3,319,018	3,299,161	6,119,698	6,199,708
Pay roll taxes	10,052,685	8,744,834	4,609,839	3,691,994	1,660,373	1,518,084	3,782,473	3,534,756
All other taxes	25,029,335	22,179,716	10,144,479	9,364,449	6,234,567	5,123,968	8,650,289	7,691,299

FOR THE TEN MONTHS ENDED WITH OCTOBER, 1939 AND 1938

Miles of road operated at close of month*	233,518	234,529	57,577	57,895	44,474	44,677	131,467	131,957
Revenues:								
Freight	\$2,664,389,689	\$2,342,475,174	\$1,091,816,587	\$910,788,241	\$533,061,315	\$475,560,633	\$1,039,511,787	\$956,126,300
Passenger	349,812,040	337,372,623	194,796,917	184,603,084	44,370,790	44,592,692	110,644,333	108,176,847
Mail	79,753,809	77,281,113	30,661,161	29,531,654	13,712,600	13,445,235	35,380,048	34,304,224
Express	44,939,062	39,266,532	18,585,485	14,253,419	9,111,079	8,066,778	17,242,498	16,946,335
All other operating revenues	142,902,653	130,523,800	68,980,250	63,324,595	17,550,517	16,849,422	56,371,886	50,349,783
Railway operating revenues	3,281,797,253	2,926,919,242	1,404,840,400	1,202,500,993	617,806,301	558,514,760	1,259,150,552	1,165,903,489
Expenses:								
Maintenance of way and structures	393,455,261	354,138,694	146,836,301	127,854,656	68,952,675	64,148,667	177,666,285	162,135,371
Maintenance of equipment	628,835,842	556,597,232	274,187,689	229,655,729	120,543,474	108,328,881	234,104,679	218,612,622
Traffic	88,493,439	85,335,479	32,182,558	31,051,239	16,624,551	16,156,677	39,686,330	38,127,563
Transportation—Rail line..	1,163,405,396	1,122,557,897	521,652,707	491,260,862	194,987,663	189,332,103	446,765,026	441,964,932
Transportation—Water line.	4,197,623	3,894,554	.....	.....	.....	.....	4,197,623	3,894,554
Miscellaneous operations ..	31,457,826	31,439,475	13,439,287	13,775,736	3,789,595	3,721,677	14,228,944	13,942,062
General	106,673,633	106,387,021	42,394,933	42,153,149	20,304,012	20,279,458	43,974,688	43,954,414
Transportation for investment—Cr.	3,486,149	2,679,257	467,235	494,153	555,320	446,699	2,463,594	1,738,405
Railway operating expenses	2,413,032,871	2,257,671,095	1,030,226,240	935,257,218	424,646,650	401,520,764	958,159,981	920,893,113
Net revenue from railway operations	868,764,382	669,248,147	374,614,160	267,243,775	193,159,651	156,993,996	300,990,571	245,010,376
Railway tax accruals	301,767,722	286,338,260	128,882,898	121,502,078	62,277,115	56,887,638	110,607,709	107,948,544
Railway operating income	566,996,660	382,909,887	245,731,262	145,741,697	130,882,536	100,106,358	190,382,862	137,061,832
Equipment rents—Dr. balance	80,919,724	79,412,670	36,115,284	33,105,109	3,515,434	4,718,244	41,289,006	41,589,317
Joint facility rent—Dr. balance	29,459,439	29,457,604	16,034,485	15,825,877	3,110,827	3,272,393	10,314,127	10,359,334
Net railway operating income	456,617,497	274,039,613	193,581,493	96,810,711	124,256,275	92,115,721	138,779,729	85,113,181
Ratio of expenses to revenue (per cent)	73.5	77.1	73.3	77.8	68.7	71.9	76.1	79.0
Depreciation included in operating expenses	168,432,555	168,594,191	73,840,726	73,699,282	33,246,154	32,879,754	61,345,675	62,015,155
Pay roll taxes	88,418,267	82,425,319	38,591,144	34,505,874	15,262,888	14,630,955	34,564,235	33,288,490
All other taxes	213,349,455	203,912,941	90,291,754	86,996,204	47,014,227	42,256,683	76,043,474	74,660,054

* Represents an average of the mileage reported at the close of each month within the period.

† Decrease, deficit or other reverse items.

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

Southern Pacific Power

Protected with

HOLLOW



FLANNERY BOLT